

# The Future of Learning

The Impact of EdTech on Learning Outcomes in the Philippines

December 2024



## GSMA

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### Acknowledgements

This report draws on research conducted for the GSMA by Liezl F. Dunuan and Dr. Maria Mercedes T. Rodrigo. We would like to thank Jemellene Baluyot from the UK FCDO Philippines for her support and feedback.

Finally, we would like to thank the many individuals and organisations that contributed to this research. A full list of organisations consulted for the research can be found at the end of the report.

## GSMA Central Insights Unit

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This initiative has been funded by UK Aid from the UK Government and is supported by the GSMA and its members. The views expressed do not necessarily reflect the UK Government's official policies.

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## Acronyms and abbreviations

<b>AI</b>	Artificial Intelligence	<b>LMIC</b>	Low- and Middle-Income Country
<b>ADB</b>	Asian Development Bank	<b>LMS</b>	Learning Management System
<b>AR</b>	Augmented Reality	<b>M&amp;E</b>	Monitoring and Evaluation
<b>BEDP</b>	Basic Education Development Plan	<b>MNO</b>	Mobile Network Operator
<b>CHED</b>	Commission on Higher Education	<b>MOOC</b>	Massive Open Online Course
<b>CSR</b>	Corporate Social Responsibility	<b>NGO</b>	Non-governmental Organisation
<b>DCP</b>	Department of Education Computerization Program	<b>NLP</b>	Natural Language Processing
<b>DepEd</b>	Department of Education	<b>PBE</b>	Philippine Business for Education
<b>EDCOM2</b>	Second Congressional Commission on Education	<b>PISA</b>	Programme for International Student Assessment
<b>EdTech</b>	Education Technology	<b>PPP</b>	Public-Private Partnership
<b>FCDO</b>	Foreign, Commonwealth & Development Office	<b>SNeD</b>	Special Needs Education (formerly SPED)
<b>GBF</b>	Gokongwei Brothers Foundation	<b>STEM</b>	Science, Technology, Engineering and Mathematics
<b>GenAI</b>	Generative Artificial Intelligence	<b>TESDA</b>	Technical Education and Skills Development Authority
<b>HIC</b>	High-Income Country	<b>TVET</b>	Technical and Vocational Education and Training
<b>ICT</b>	Information and Communications Technology	<b>UNDP</b>	United Nations Development Programme
<b>IoT</b>	Internet of Things	<b>VR</b>	Virtual Reality
<b>KAP</b>	Khan Academy Philippines	<b>XR</b>	Extended Reality
<b>LGU</b>	Local Government Unit		

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**Case study 13:** Kipin

**Case study 14:** The ADB EdTech project

**Case study 15:** Orenda

**Case study 16:** Kortext

## Definitions

### Adaptive learning

The customisation of education to meet the individual needs and interests of students.

### Education technology (EdTech)

The use of digital tools or technology in the education system.

### EdTech tools/solutions

Hardware or software products or services that enhance teaching and learning through their usage.

### EdTech providers

Organisations that develop and deploy EdTech interventions either as builders or facilitators.

### EdTech users

Students, teachers, parents/caregivers and school administrators that use EdTech tools and solutions in their educational activities.

### Gamified learning platforms

Learning platforms that use game elements and mechanics in educational activities.

### Generative AI

A type of AI that involves generating new data or content, including text, images or videos, based on user prompts and by learning from existing data patterns.

### Geographically isolated and disadvantaged areas

Communities that are marginalised from mainstream society due to:

- Physical factors such as distance, weather conditions and transportation challenges
- Socio-economic factors such as high poverty rates, crisis situations or armed conflict<sup>1</sup>

### Learning outcomes

Measurable skills, knowledge or activities that students are intended to demonstrate after completion of an education course.

### Learning management system

Software that is used for a range of educational activities, including administration, documenting, grading, course delivery, training and assessment.

### Level 2 proficiency

The baseline level of proficiency that students need to participate fully in society, according to the Programme for International Student Assessment (PISA).<sup>2</sup>

### Offline learning platforms

Digital learning platforms that require no or minimal internet connectivity.

### Online learning platforms

Web-based or mobile-based learning platforms that require internet connectivity.

### Predictive AI

A type of AI that uses statistical analysis and machine learning algorithms to make predictions about potential future outcomes, identify causation and assess risks.<sup>3</sup>

### Virtual classroom

Online teaching and learning environment that simulates the classroom experience for teachers and students.

<sup>1</sup> For more information, see the [Quick Response Team \(QRT\) portal](#).

<sup>2</sup> OECD. (2022). [PISA 2022 Results - Factsheets: Philippines](#).

<sup>3</sup> [Definition from the Carnegie Council for Ethics in International Affairs](#).



## Executive summary

**The use of education technology (EdTech) presents a significant opportunity to improve learning outcomes and foster socio-economic development in the Philippines.** Digital technologies have the potential to alleviate some of the critical challenges faced in the education sector, including inefficient public school infrastructure, especially in remote areas, recurring climate events that disrupt teaching in schools, inadequate access to textbooks and learning materials and high levels of poverty that push a high proportion of children out of school. Given that the Philippines has a large youth population (30 million, more than 25% of the population), it is important for the country to leverage this demographic advantage.<sup>4</sup>

**The Philippines scores among the lowest globally in student performance, according to the 2022 Programme for International Student Assessment (PISA).** Underperformance at the school and university level can have significant social,

developmental and economic impacts, holding back the country's future workforce and reducing global competitiveness. While digital education can play a key role in improving learning outcomes and student performance in the Philippines, there are several barriers to implementing EdTech solutions that need to be addressed.

**Over the past two decades, digital education has supplemented student learning both within and outside the classroom.** The extended closure of schools in the Philippines<sup>5</sup> during the global COVID-19 pandemic forced educators, students and parents/caregivers to migrate online, accelerating the use of digital tools as the primary means to access education.<sup>6</sup> This shift revealed gaps in implementing digital education tools at scale. Now, as the Philippines adapts to post-pandemic life, there is an opportunity to streamline the implementation of EdTech solutions across the country.

<sup>4</sup> Philippines Statistics Authority. (2024). [Fact Sheet on Women and Men in the Philippines](#).

<sup>5</sup> Save the Children. (22 August 2022). "Philippines: Statement as one of the world's longest COVID-19 related school closures ends".

<sup>6</sup> Blacer Bacolod, D. (2022). "Mobile Learning as a Solution for Restricted Learning during the COVID-19 Pandemic". *Journal of Digital Educational Technology*, Vol. 2, Issue 1.

# Enablers of an EdTech ecosystem

To strengthen the implementation of EdTech in the Philippines, it is important to consider the fundamental enablers required for EdTech solutions to be developed and deployed. These enablers include digital infrastructure and mobile connectivity, access to reliable sources of electricity and the digital skills of teachers, students, parents and caregivers. They also include a conducive regulatory environment that promotes partnerships between the government and EdTech providers, encourages innovation in EdTech and improves foundational digital infrastructure. This report examines the relevance of

each of these enablers and shares recommendations to strengthen them in the Philippines.

To ensure that EdTech solutions are sustainable over the long term, the report also identifies key parameters for measuring their effectiveness. These include the measurable impact of EdTech on learning outcomes, scalability, accessibility, environmental sustainability, affordability, inclusivity and safety and security (Figure 8). EdTech providers may refer to these parameters and the suggested sub-parameters when designing their solutions.

# Existing EdTech use cases

Based on a literature review and interviews with key players in the EdTech ecosystem in the Philippines, this report highlights six predominant use cases being implemented: online learning platforms, offline learning platforms, virtual classrooms, adaptive learning, learning management systems (LMS) and gamified learning platforms. Depending on their delivery channel and underlying technologies, the use cases can be applied in a variety of geographical contexts to ensure all students have access to quality

education. Through case studies and examples of EdTech interventions, the report identifies some of the key characteristics of these use cases and describes the roles played by different stakeholders in the EdTech ecosystem. The report also draws on examples of EdTech interventions in other markets, including Australia, India, Indonesia, Pakistan, the United Kingdom and Vietnam.



# Summary of recommendations

The report presents several recommendations to improve EdTech adoption in the Philippines, which may be applicable to the implementation of EdTech in low- and middle-income countries (LMICs) in general. The recommendations are based on key findings from interviews with ecosystem experts and a review of EdTech solutions being deployed in other LMICs and high-income countries (HICs).

**While EdTech initiatives have been widely implemented in the Philippines, the sharing of lessons and best practices has been limited and there is lack of evidence of their impact.** To understand the impact of ongoing EdTech initiatives and inform future efforts, it is important to establish a uniform monitoring and evaluation (M&E) process and impact measurement metrics.

**A key barrier to the adoption of EdTech solutions at scale in the Philippines is inadequate capacity building and training for teachers.** Existing efforts are not equipping teachers to implement EdTech in schools effectively, leading them to revert to traditional teaching tools in some cases. Teacher training and capacity building programmes must be reviewed to identify and address gaps in digital capabilities, and to incentivise educators to integrate EdTech in their teaching.

**The EdTech solutions being deployed in the Philippines are diverse in their intended objectives, end users, areas of focus and delivery channels.** However, experts have observed that EdTech solutions do not always reflect the learning environments of students, resulting in low student engagement. Given the varied geographical, regional and cultural contexts in the Philippines, it is important to incorporate the learning environments and constraints of students in the design process.

**Lessons from EdTech initiatives in both LMICs and HICs suggest that stakeholder partnerships are critical to developing engaging and effective EdTech solutions and implementing them at scale.**

It is important to develop stronger links between EdTech stakeholders to ensure initiatives are sustainable beyond pilot programmes and one-time projects.

**A key enabler of this report's recommendations is a national EdTech policy or strategy that can be adapted at regional and local levels.** Central, regional and local government agencies, in collaboration with EdTech stakeholders, should devise a comprehensive strategy for the delivery of EdTech that incentivises the development of EdTech tools and develops the digital foundations required to implement them.

**The report also discusses the potential of new and emerging technologies, such as generative artificial intelligence (GenAI), augmented and virtual reality (AR/VR) and robotics.** These technologies can enhance the benefits of EdTech solutions and have a positive impact on learning outcomes in the Philippines. While these technologies are still in the pilot stage, stakeholders in the Philippines can learn from how AI is being used in other countries. To strengthen the ecosystem for emerging technologies in the meantime, the foundational components of data, AI computing and digital skills must be developed by the government in collaboration with the private sector.

# 01. Introduction



The education sector in the Philippines faces a range of issues, from poor learning outcomes to disparities in access to education in rural and urban areas, inadequate resources in public schools, teacher shortages and teacher quality, among others. These issues are largely caused by factors that include high levels of poverty, lack of resources and public infrastructure and the worsening impacts of climate change.<sup>7</sup> The Philippines experiences some of the most extreme weather events in the world, from dangerously high heatwaves to typhoons and flooding, adversely affecting economic and social activities. The World Economic Forum Global Risks Report 2023 identified natural disasters and extreme weather events as the greatest risk to the country out of 35 national risks.<sup>8</sup> The increasing occurrence of extreme climate events, including heatwaves, typhoons, floods and tropical storms, have also had an adverse impact on the delivery of education, resulting in considerable learning loss.

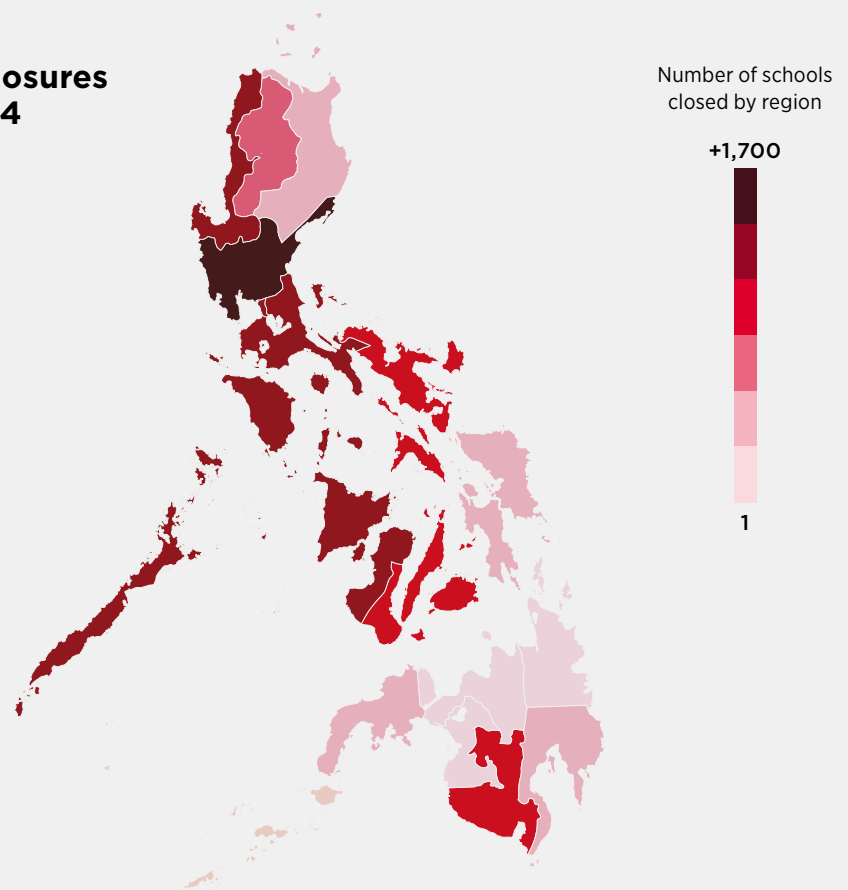
In the Philippines, 78% of public schools and 96% of students have been identified as vulnerable to climate hazards, according to the World Bank.<sup>9</sup> These hazards severely disrupt learning continuity through damage to school buildings and school closures for the safety of students. Between 2021 and 2023, damage to school buildings from climate events disrupted the learning of more than 2 million students. More recently, an unprecedented heatwave in April and May 2024 forced schools in the Philippines to close or resort to online home learning for several days.<sup>10</sup> During the 2023-2024 school year, a total of 53 teaching days were lost due to school closures, non-teaching tasks and local holidays.<sup>11</sup> This could have a major impact on learning, with estimates suggesting that one week of school closure can result in a decline of almost 1% in learning levels.<sup>12</sup> Figure 1 shows the impact of heatwaves on school closures as of April 2024.

Figure 1

### Impact of heatwaves on school closures in the Philippines, as of April 2024

**7,188 schools**

had shut down by April 25, 2024



Source: Ramos, M. (11 June 2024). "Hell or high water: Filipino schools lashed by climate extremes". Context.

7 Philippine Institute for Development Studies. (2023). "Educational Challenges in the Philippines".

8 World Economic Forum. (2023). [The Global Risks Report 2023](#).

9 World Bank. (17 November 2023). Press release. "[World Bank delivers financial boost to Philippines to strengthen climate preparedness at schools, health facilities, communities](#)".

10 Ramos, M. (11 June 2024). "Hell or high water: Filipino schools lashed by climate extremes". Context.

11 Senate of the Philippines. (18 June 2024). Press release. "[53 teaching days lost in SY 2023-2024 - EDCOM 2, PIDS](#)".

12 Philippine Institute for Development Studies. (12 February 2024). Press release. "[COVID-19 school closures led to significant learning losses, says World Bank expert](#)".

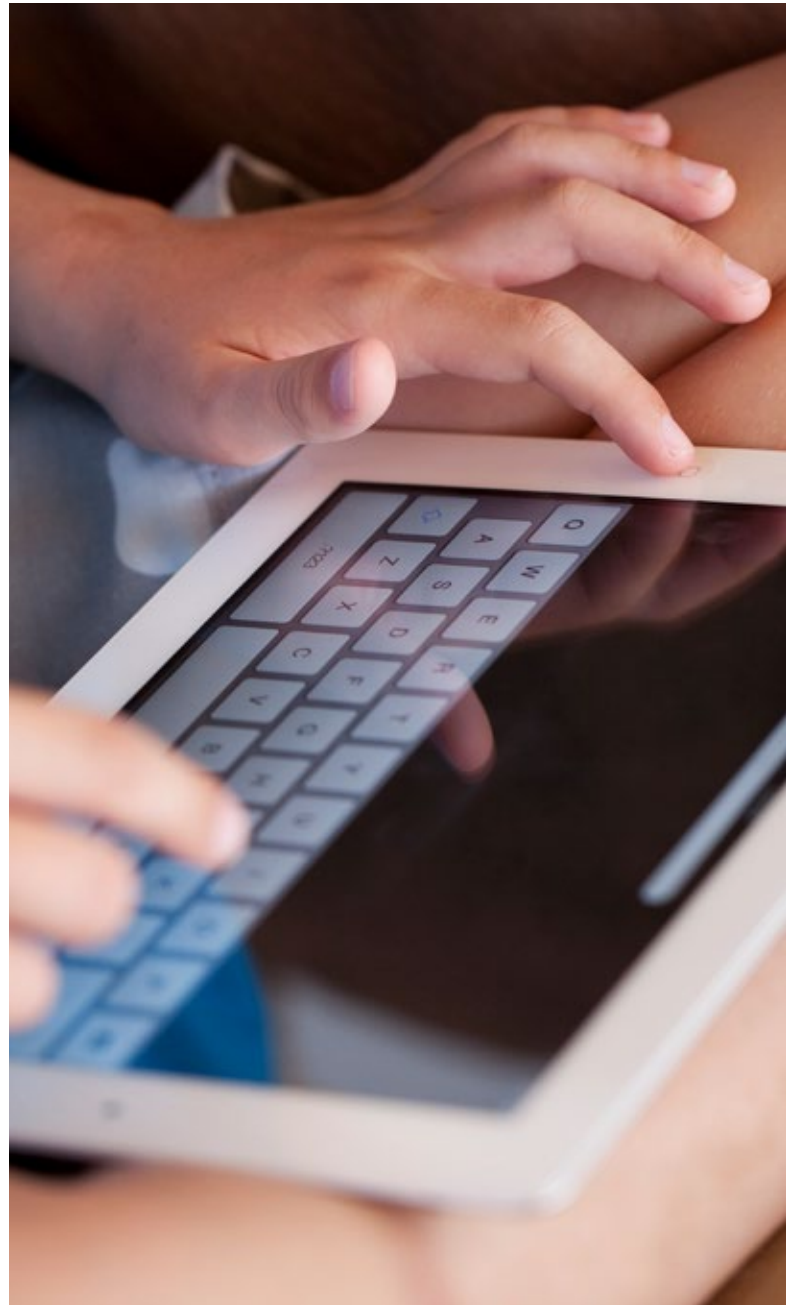
To offset the impacts of climate change and ensure education for all, it is crucial to build the resilience of the education sector in the Philippines, including digital learning as a mode of delivery within and outside the classroom.

A key barrier, however, is the digital divide in access to connectivity and availability of digital devices in the Philippines, especially between rural and urban areas and between households in different income groups.<sup>13</sup> This makes it difficult for some students to access digital resources, especially those who do not have regular access to the internet. About half of all students in the Philippines have some form of internet access at home.<sup>14</sup> However, factors like increasing smartphone penetration in the Philippines, forecasted to account for 95% of all connections by 2030, as well as the rapid uptake of 5G, are poised to make the Philippines a promising market for digital solutions.<sup>15</sup>

Along with connectivity, lack of access to reliable electricity and adequate power infrastructure holds students back, especially in remote areas. Information and communications technology (ICT) infrastructure in schools is not uniformly available, and the number of available computers is not proportionate to the number of children in school. To expand learning to students' homes, both children and teachers need access to devices that allow them to access online education and use EdTech tools. Teachers, especially those who are older, may also need support in the transition to using technology in the classroom, as 20% of primary school teachers stated they do not feel confident using ICT tools in the classroom.<sup>16</sup>

The need for this study arises because of a gap in understanding of how EdTech is being deployed in the Philippines and how different EdTech use cases could help address key challenges for students and teachers. Given the common challenges faced in the education sector across LMICs, there is an opportunity to learn from how other countries are implementing EdTech effectively. Similarly, given the potential to integrate emerging technologies like AI, robotics and AR/VR in the delivery of education, it is informative to examine use cases from high-income countries (HICs).

This report highlights the role EdTech can play, and is already playing, in addressing education challenges globally, and assesses how EdTech can be implemented effectively in the Philippines to improve learning outcomes. While the report focusses on the Philippines, lessons can also be applied more broadly to other LMICs.



<sup>13</sup> UNESCO. (2023). [Technology in education: a case study on the Philippines](#).

<sup>14</sup> Global Education Monitoring Report Team and South-East Asian Ministers of Education Organization. (2023). [Southeast Asia: technology in education: a tool on whose terms?](#)

<sup>15</sup> Yaici, K. (30 July 2024). "Faster Speeds and the Promise of New Use Cases is Driving 5G SA Adoption", GSMA.

<sup>16</sup> Global Education Monitoring Report Team and South-East Asian Ministers of Education Organization. (2023). [Southeast Asia: technology in education: a tool on whose terms?](#)

# 02.

## Research objectives and methodology



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### Research objectives

**The aim of this report is to explore the opportunity for mobile and digital technologies to build cost-effective and inclusive EdTech solutions in the Philippines. Specifically, it aims to:**

- Examine the current use of digital and mobile technologies in the education sector in the Philippines
- Explore the potential to address gaps in the sector through digital innovation, applying best practices and potential solutions from other markets
- Present recommendations to the UK Foreign, Commonwealth & Development Office (FCDO), the Government of the Philippines, policymaking bodies, including the Second Congressional Commission on Education (EDCOM2), and other stakeholders in the education sector, to enhance the development and adoption of EdTech solutions in the country.

## Methodology

The main methodologies and objectives used for this research are outlined in Table 1.

Table 1:

### Methodologies used in the research

Data source	Objective
<b>Desk-based research</b>	<ul style="list-style-type: none"><li>▶ Develop an understanding of digital and mobile technologies currently deployed in the education sector in the Philippines</li><li>▶ Identify key initiatives and programmes implemented by national and international organisations to facilitate the deployment of EdTech in the Philippines</li><li>▶ Identify key EdTech solutions being deployed by governments in other countries (including Australia, India, Indonesia, Pakistan, the UK and Vietnam)</li></ul>
<b>Semi-structured interviews</b>  Key informant interviews with government ministries and agencies, development partners and non-governmental organisations (NGOs) involved in EdTech in the Philippines, as well as national and international EdTech solution providers*	<ul style="list-style-type: none"><li>▶ Identify key barriers in implementing EdTech solutions at scale in the Philippines</li><li>▶ Understand the key needs and barriers faced by government agencies, NGOs and the private sector in developing and implementing EdTech solutions</li><li>▶ Identify best practices followed by EdTech providers in other countries that are working with national governments to implement EdTech solutions at scale</li></ul>
<b>Roundtable discussion</b>  Participants included national civil society organisations, research institutions, EdTech providers, schools and private sector organisations, including EdTech providers and telecommunications companies (telecoms)*	<ul style="list-style-type: none"><li>▶ Understand the current use of EdTech in the Philippines and the most popular use cases being implemented</li><li>▶ Learn about the key players involved in the delivery of EdTech in the Philippines</li></ul>

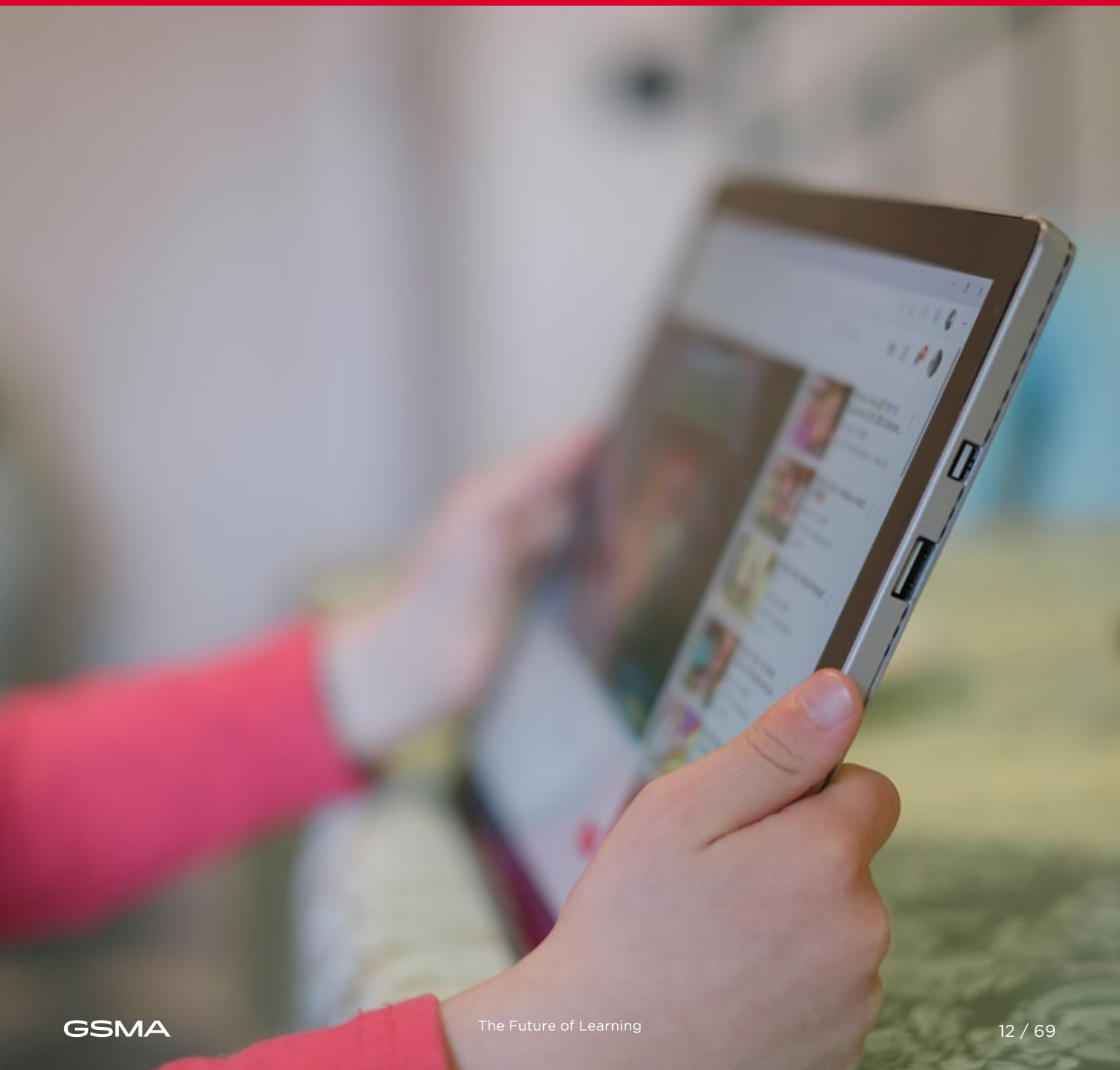
\*A full list of key informants and roundtable participants can be found in Annex 1.

International markets such as Australia, India, Indonesia, Pakistan, the UK and Vietnam, were used to identify lessons and best practices for the Philippines. Each case study was selected based on its applicability to the Philippines either in terms of the challenges it addresses or the local context in which it has been deployed.

This report is intended for the use of a range of actors in the Philippines as well as other LMICs, including EdTech solution providers, international development partners, academic and research institutions, civil society organisations and private sector companies.

The findings of the report may also be used by government agencies and policymaking bodies to inform their deliberations on the role of EdTech in the education sector. This report can also serve as a guide for LMICs instigating the use of mobile and digital technologies in the education sector.

# 03. Unlocking the potential of ICT in education



## 3.1 The education sector in the Philippines

More than 27 million students are enrolled in public and private schools and state and local universities and colleges in the Philippines.<sup>17</sup> Of the approximately 66,000 elementary and secondary schools in the country, 75% are public schools.

Basic education in the Philippines comprises kindergarten to grade 12 (17–18 years old) and higher education refers to college and university education.

Basic education is governed by the Department of Education (DepEd) and its various bureaus, while higher education is governed by the Commission on Higher Education (CHED). In addition, the Technical Education and Skills Development Authority (TESDA) is responsible for technical and vocational education and training (TVET) programmes in the Philippines.

### Key challenges in the education sector

The education sector in the Philippines faces numerous challenges.<sup>18</sup> In 2022, the country scored among the lowest globally for student performance

in core subjects of mathematics, reading and science.<sup>19,20</sup> This section highlights some of the key challenges faced by the education sector.

#### School closures

The Philippines is experiencing a rise in the frequency and intensity of extreme weather. Approximately 78% of public schools and 96% of students are vulnerable to weather events such as typhoons, landslides, floods and heatwaves.<sup>21</sup> Schools are often closed for the safety of students and school buildings have been damaged. In 2022 alone, the learning of more than 2 million students was disrupted by climate-related damage to school buildings.<sup>22</sup>

Ongoing armed conflict in the Maguindanao province has also forced schools to close to protect the safety of students.<sup>23</sup> School closures have a major impact on learning, with estimates suggesting that one week of school closure could result in a decline of almost 1% in learning levels.<sup>24</sup> Maintaining learning continuity during extreme climate events and periods of armed conflict is therefore crucial.

#### Inadequate resources

The impacts of climate change not only result in school closures but also the destruction of school buildings and learning materials such as textbooks. This has economic implications as budgets must frequently be used to restore buildings and restock learning materials. This work also takes time, further hindering the return to school following an extreme weather event.

common in rural Philippines due to a lack of resources and students, creating a challenging educational environment in which teachers must adapt their teaching to the needs of students at a range of learning levels. This has yet to be addressed at scale.

Resources are limited in rural areas, particularly on small islands and in geographically isolated and disadvantaged areas (GIDA). These regions contend with fewer teachers, smaller classrooms and reduced resources, limiting the quality of education that can be delivered. Multigrade classrooms are also

17 EDCOM2. (2024). *Miseducation: The Failed System of Philippine Education: EDCOM II Year One Report*.

18 Bai, N. (4 August 2023). "Educational Challenges in the Philippines". Broken Chalk.

19 Hernando Malipot, M. (6 December 2023). "2022 PISA results a 'clear indication' that PH education system is in 'worst state' --- PBEEd". Manila Bulletin.

20 The Programme for International Student Assessment (PISA) is conducted by the Organisation for Economic Co-Operation and Development (OECD) and measures the academic performance of 15 year-olds around the world.

21 World Bank. (17 November 2023). Press release. "World Bank delivers financial boost to Philippines to strengthen climate preparedness at schools, health facilities, communities".

22 Ibid.

23 Bravo, D.Q. (31 July 2024). "Evacuees displace kids from classrooms amid clashes in Maguindanao". Inquirer.net.

24 Philippine Institute for Development Studies. (12 February 2024). Press release. "COVID-19 school closures led to significant learning losses, says World Bank expert".

## Out-of-school youth

One of the major challenges for education in the Philippines is the high numbers of youth who are out of school. According to the World Bank, 86% of the population aged 25 and over have completed primary education, but this drops to 35% for secondary education and 26% for higher education.<sup>25</sup> This is owing to a number of factors, such as lack of student engagement, low academic performance<sup>26</sup> and gender-specific factors such as early marriage and pregnancy, which reduce motivation to continue studies. Furthermore, many low-income families are

compelled to choose work over education to meet their immediate financial needs.<sup>27</sup> Some communities, particularly in rural areas, do not have adequate schooling facilities, excluding children from attending school. Schools catering to students with additional needs are also lacking. The high prevalence of out-of-school youth affects both individuals and communities, leading to limited job opportunities and the chance to secure higher incomes, impeding economic stability and growth.

## Disability inclusion in education

For children with disabilities, the provision of quality education is compounded by a lack of appropriate resources, specialised teachers and general knowledge of how to deliver inclusive access to education. The number of Special Needs Education (SNeD) learners in the Philippines increased by 42% between 2021 and 2022, increasing the student-teacher ratio to 38:1.<sup>28</sup> Yet, 59% of schools at the

elementary level, 56% at the junior high level and 29% at the senior high level do not offer places for persons with disabilities.<sup>29</sup> In 2021, DepEd launched policy guidelines on the Provision of Educational Programs and Services of Learners with Disabilities in the K to 12 Basic Education Program.<sup>30</sup> While this policy is a notable step toward inclusive education for children with disabilities, in practice, substantial gaps remain.



25 For more information, see the World Bank Data website: [Philippines](#).

26 Child Hope Philippines. (16 August 2024). "[Bridging the Gap: Understanding and addressing school dropouts in the Philippines](#)".

27 USAID. (2022). [The Philippines Out of School Youth Ecosystem: An Opportunity 2.0 Study](#).

28 For more information, see "[Basic Education](#)", Situation of Children Philippines.

29 Ibid.

30 DepEd. (2021). [Policy guidelines on the provision of educational programs and services for learners with disabilities in the K to 12 basic education program](#).

## Teacher training and capacity building

The NGO Philippine Business for Education (PBE) identifies teacher quality as one of seven priorities to improve learning outcomes, and lack of teacher support as one of the four most pressing issues.<sup>31</sup> Teacher training suffers from gaps in courses that leave newly qualified teachers underprepared to plan lessons and manage a classroom. Furthermore, nonteaching requirements, including administrative work, committee work and compulsory training, are highly demanding.

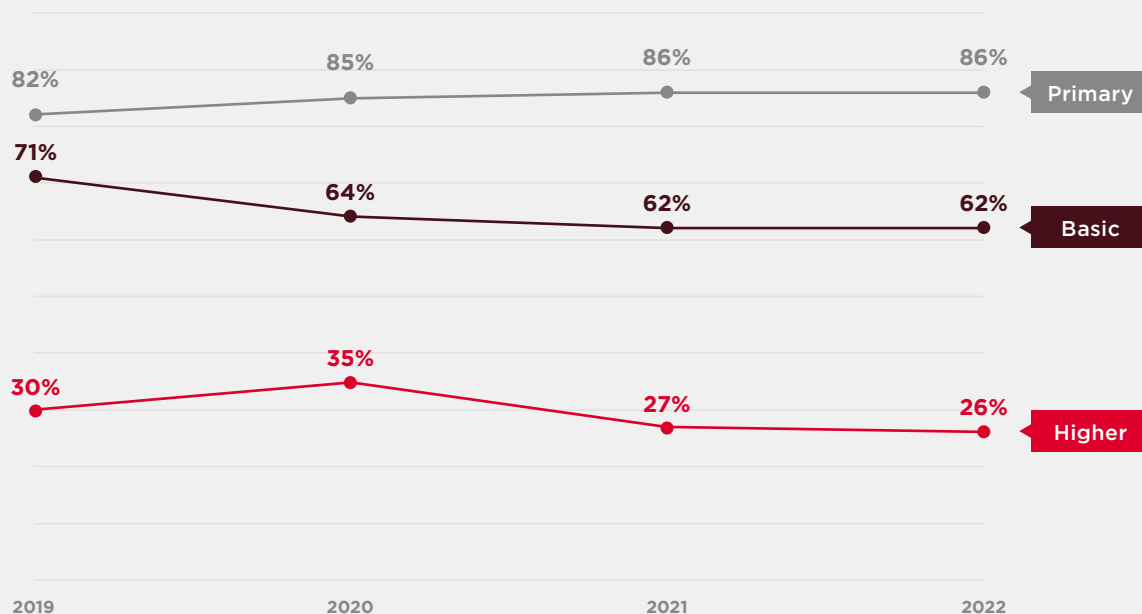
The lack of support and professional development available to teachers in the Philippines acts as a deterrent to the profession and has led to low recruitment rates and high numbers of teachers seeking opportunities abroad. The student-to-teacher ratio across the Philippines is increasing, with substantial disparity between regions.<sup>32</sup> In 2022, ratios were as different as 20:1 in the Cordillera

Administrative Region (CAR) (elementary level) and 67:1 in the Bangsamoro Autonomous Region in Muslim Mindanao (BARMM) (all education levels). According to PISA 2022, a global education evaluation survey led by the Organisation for Economic Co-operation and Development (OECD), results show that 43% of students in the Philippines attend schools where instruction has been reduced due to teaching staff shortages.<sup>33</sup>

As shown in Figure 2, school completion rates beyond primary education are declining, indicating a need to strengthen the education sector. The challenges mentioned at both the school and university level can have serious social, developmental and economic impacts for the Philippines, holding back the future workforce and affecting the country's global competitiveness in the coming years.

Figure 2

### Philippine population aged 25 and over who have completed at least primary, basic and higher education (%)



Source: World Bank, 2022<sup>34</sup>

Source: World Bank, 2022<sup>34</sup>

31 PBE. (2023). *The State of Philippine Education Report 2023*.

32 For more information, see: "Basic Education", Situation of Children Philippines.

33 OECD. (2023). *PISA 2022 Results (Volume I and II) - Country notes: Philippines*.

34 For more information, see World Bank Data: [Philippines](#).

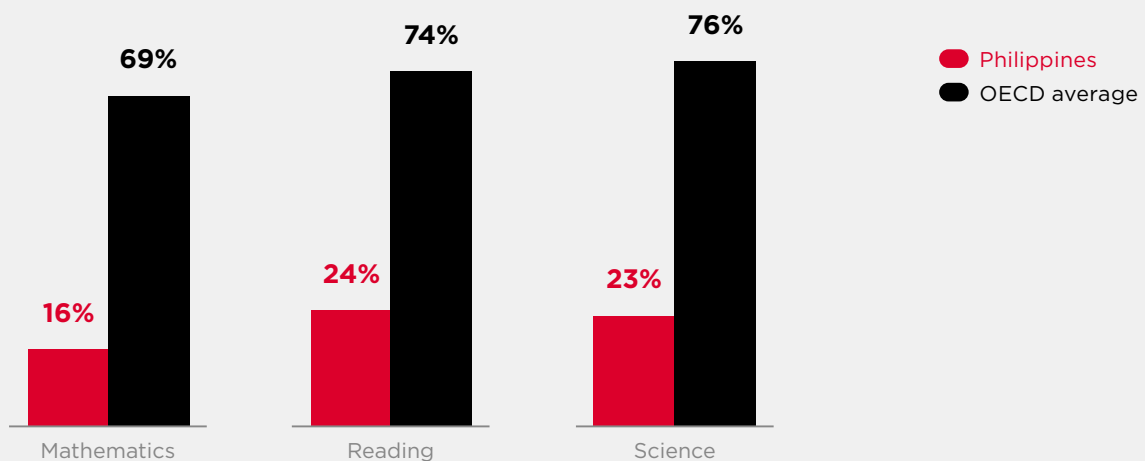
## 3.2 Current use of EdTech in the Philippines

Learning levels in the Philippines have reached critically low levels since the onset of the global COVID-19 pandemic. In 2022, proficiency in core subjects of reading, mathematics and science at age 15 was low (Figure 3).

According to the World Bank, 91% of 10 year-old children were experiencing learning poverty, meaning they could not read or understand short, age-appropriate text, compared with 35% on average in the East Asia and Pacific region and 60% in LMICs.<sup>35</sup>

Figure 3

### Percentage of 15 year-olds achieving Level 2 proficiency in core learning subjects<sup>35</sup>



Source: PISA scores (2022)

The onset of the pandemic forced the government to resort to distance learning with little preparation, exacerbating educational gaps. The Philippines was the last country in the world to reopen in-person classes,<sup>37</sup> with education from October 2020 to November 2021 conducted entirely through distance learning.

Existing gaps in access to digital infrastructure had a disproportionate impact on rural and underserved communities and rendered this form of learning inaccessible for many students. The World Bank estimates that as little as 25% of students who attended school prior to the pandemic engaged in learning activities during community lockdowns.<sup>38</sup>

Even students who had access to distance learning faced challenges engaging with content, with 67% reporting that they preferred physical classes because it was difficult to understand learning materials in modules or online classes.<sup>39</sup> During remote learning, 41% of students had problems at least once a week understanding school assignments and 34% had problems finding someone who could help them with schoolwork.<sup>40</sup>

<sup>35</sup> World Bank. (2022). [Philippines: Learning poverty brief](#).

<sup>36</sup> In the PISA assessments, Level 2 proficiency refers to the baseline level of proficiency students need to participate fully in society.

<sup>37</sup> For more information, see ["COVID-19 education response"](#), UNESCO.

<sup>38</sup> World Bank. (2021). [The Impact of the COVID-19 Pandemic on Low Income Households in the Philippines: Impending Human Capital Crisis](#).

<sup>39</sup> Embudo, F.L. (29 October 2021). ["Research: Filipino children struggle to study at home due to distractions; prefer face-to-face classes"](#), OneNetwork.

<sup>40</sup> OECD. (2022). [PISA 2022 Results - Factsheets: Philippines](#).



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## Relevance of EdTech in the Philippines

The geography of the Philippines, which is home to more than 2,000 inhabited islands and diverse cultures, language and regional contexts, present unique challenges for the delivery of quality and accessible education. The education sector is faced with ensuring that each of these contexts is served appropriately with high-quality, inclusive and engaging learning content.<sup>41</sup> This requires flexible curricula informed by intricate local knowledge. However, a lack of national resources and disparities in local resources prevent government agencies from implementing this at scale. Digital technologies have the potential to address some of these needs by enabling the delivery of affordable, inclusive and scalable education solutions across the Philippines.

The considerable learning loss faced by the country as a result of the COVID-19 pandemic has been compounded by the severe impacts of climate events

on educational facilities. In December 2021, Typhoon Odette affected 11 regions and 29,671 schools in the Philippines, with 5,800 classrooms and 28 million learning materials destroyed.<sup>42</sup> DepEd estimated the costs of reconstruction and repair of classrooms at more than PHP 21 billion (USD 370 million). As one of the countries most affected by climate change, the Philippines grapples with developing an education sector that is equipped to maintain learning continuity amid recurring climate-related disasters.

The Philippines would benefit from the increased adoption of EdTech to close learning gaps and prevent learning setbacks due to climate-related school closures and other disruptions. This report advocates for a blended approach to EdTech to strengthen the existing school system and maximise learning outcomes in the country.

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41 The Knowledge Review. (n.d.). "The Significance of Culture-based Education in Philippines".

42 OCHA. (2022). Philippines: Super Typhoon Rai (Odette) – Situation Report No. 10 – Final Report (As of 8 July 2022).

## Investments in connectivity and infrastructure are critical to enable the adoption of EdTech

Building a robust foundation of digital connectivity and infrastructure is essential to ensure the Philippines is ready to deploy technology-driven education services at scale. The country is poised to be a key player in the Southeast Asian region given its growing smartphone and mobile internet connections, and the forecasted uptake of 5G services (figure 4). Parameters like fixed broadband speeds are also slowly improving, but the Philippines lags behind other Southeast Asian countries like Singapore, Malaysia, Thailand and Vietnam in median download speeds.<sup>43</sup>

The Philippines government is boosting the digital ecosystem through planned investments in fibre broadband and connectivity infrastructure. The government’s sovereign wealth fund, the Maharlika Fund has identified digital connectivity as a priority investment area for 2025.<sup>44</sup>

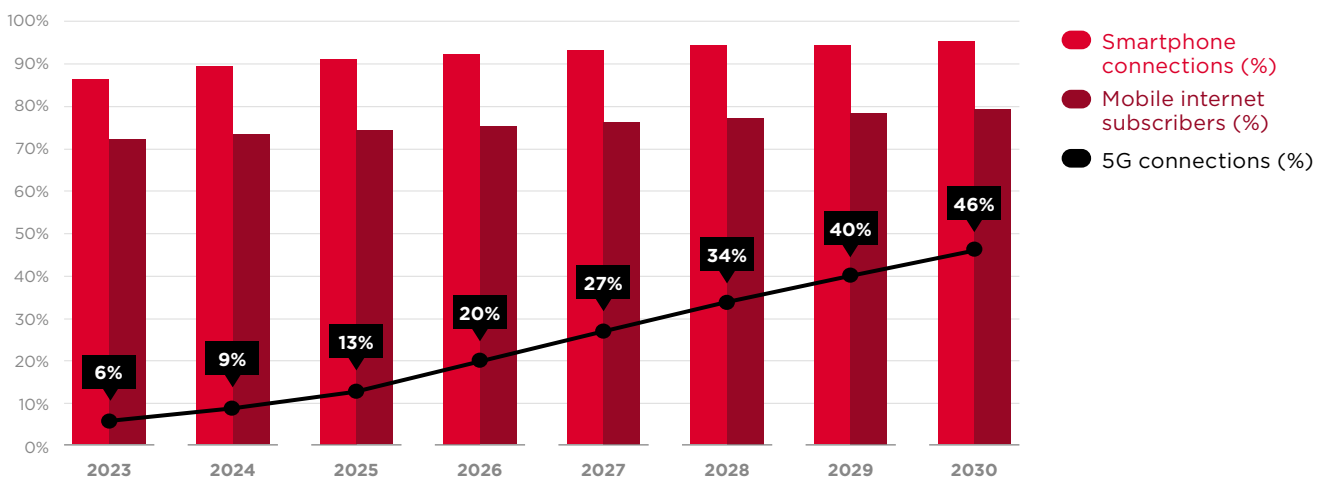
Philippine mobile network operators (MNOs) also have the opportunity to support efforts to further strengthen connectivity in the country. For example, Globe Telecom spent \$1.3 billion in 2023 in capital expenditure to boost mobile

data infrastructure, also investing in new 5G lines and fibre network.<sup>45</sup> More recently, the MNO PLDT, along with their wireless subsidiary Smart Communications and PLDT Enterprise, joined the GSMA’s Open Gateway Initiative, which aims to ensure seamless communication and better customer experience through interoperable access to mobile networks.<sup>46</sup>

Despite these efforts to boost digital connectivity and infrastructure, key barriers remain to be addressed. While at least 90% of Filipino households are able to use smartphones, there is considerable disparity within provinces, especially between the National Capital Region and developing regions like the BARMM.<sup>47</sup> Affordability of mobile devices is another barrier, with the Philippines scoring just 28.5 out of 100 on handset affordability in the GSMA’s Mobile Connectivity Index, and 19.6 on device affordability for the poorest 40%.<sup>48</sup> More needs to be done to make devices affordable for last-mile populations, such as exploring handset financing options, reviewing taxes on mobile phones that place a burden on customers and subsidising the uptake of mobile data.

Figure 4

### Connectivity parameters in the Philippines (2023-30)



Source: GSMA Intelligence data

43 Johan, A. (31 July 2024). [Fiber in the Philippines is improving and catching up with its regional peers](#). GSMA Mobile for Development Blog.  
 44 Cruz, B.M.D. (1 September 2024). ["Maharlika to be active in 2025 in all priority investment areas"](#). Business World.  
 45 Globe Telecom. (7 March 2024). ["Globe expands network in line with sustained digital inclusion push"](#).  
 46 Tomás, J.P. (25 June 2024). ["Philippine telcos join GSMA Open Gateway Initiative"](#). RCR Wireless News.  
 47 Philippine Statistics Authority. (25 January 2023). Press release. ["Three in every four women use smartphones"](#).  
 48 For more information, see the GSMA [Mobile Connectivity Index](#).



### 3.3 Opportunity for technology to address education challenges

The past two decades have seen mobile and digital technologies optimise the delivery of education through a variety of use cases. In LMICs, where the delivery of accessible and quality education is challenged by a lack of school infrastructure, inadequate access to resources such as textbooks and other learning materials, availability of sufficiently qualified teachers, low student-to-teacher ratio and socio-economic factors that contribute to school dropouts, technology can play a critical role in providing access to education for all.

In the context of this study, “EdTech” refers to the use of digital tools and platforms, or technology across the education system, in classrooms and at home. EdTech solutions are hardware or software products and services that enhance teaching and learning through their usage. While educational content has been available on mobile apps and online platforms

for several years, the COVID-19 pandemic hastened the adoption of EdTech use cases such as LMS and virtual classrooms in the wake of widespread school closures. Since the development and accessibility of emerging technologies like artificial intelligence (AI), the Internet of Things (IoT), natural language processing (NLP) and augmented and virtual reality (AR/VR) more recently, use cases have emerged that have potential to be deployed at scale.

EdTech use cases can overlap, with solutions providing multiple use cases within a single service. For example, AdaptoX (case study 4), a solution developed by Indonesian start-up Ruangguru, is both an online learning and personalised learning tool. The main categories and characteristics of EdTech use cases are highlighted in Figure 5, along with examples of solution providers both within and outside the Philippines.

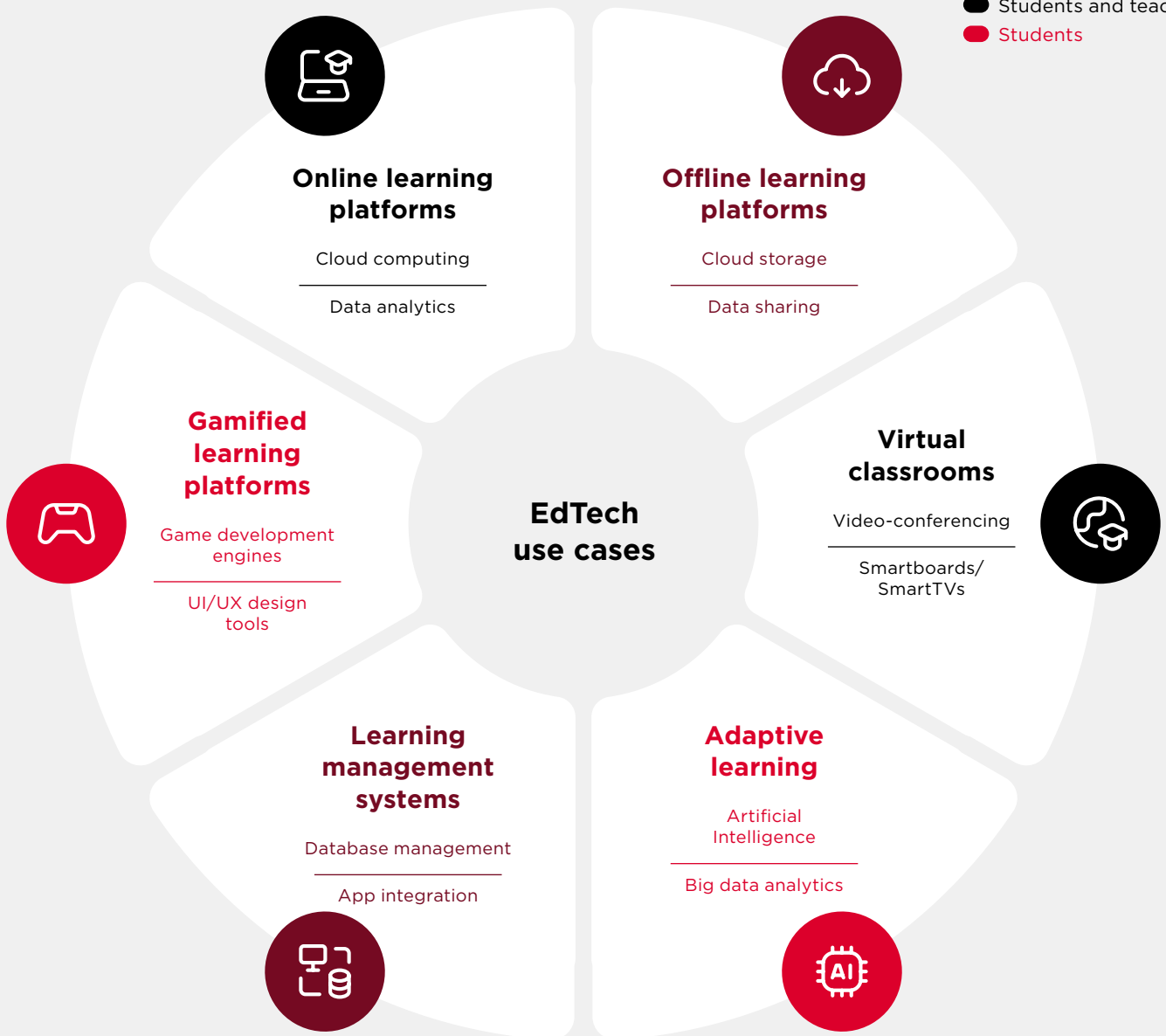
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Figure 5

**Key EdTech use cases**

**End Users**

- Teachers and schools
- Students and teachers
- Students





## 01. Online learning platforms

Online learning platforms can be either mobile apps or web-based platforms. These are particularly useful when face-to-face learning is not possible because they allow learning to continue remotely. Digital platforms can also enrich students' learning experiences when used in a hybrid format, through more engaging homework and exam preparation tasks, such as gamified and video-based content.

### Delivery channels:

Mobile apps, smart TVs and smartboards

### Examples:

[Gokongwei Brothers Foundation](#), Philippines (teacher training); [upGrad](#), India (higher education)

### Case study 1

## Gokongwei Brothers Foundation

Online lesson plans for science, technology, engineering and mathematics (STEM) teachers

### Key lesson

**Adapting training to teachers' digital needs makes training programmes more impactful**

The Gokongwei Brothers Foundation (GBF) was established in 1992 to have a positive impact on the education sector in the Philippines, with a focus on STEM education. GBF initiatives include an educator's development programme, a scholarship programme for students and technical and vocational training. They also offer a teacher scholarship to help train more qualified teachers.

One of GBF's key initiatives is Class Builder, a teacher training platform that helps teachers to learn and review the lessons that they are going to teach. Class Builder provides interactive coaching to teachers to create their lesson plans, building their skills by sharing lesson content, teaching strategies and facilitation techniques. They also provide customisable lesson content that teachers can adapt to their classrooms. The interactive platform allows teachers to access the lesson plan (in the form of PowerPoint slides) only after they have completed the day's review. GBF partnered with human-centred design (HCD) firm IDEO to create Class Builder, finding ways to lessen the burden faced by teachers in using digital content and tools in addition to administrative duties. To scale their impact, GBF is exploring the use of AI to generate content for more grade levels and subjects, hoping to build on their current output of 200 lessons per subject per year.



**Mode**  
Online and offline

**Target users**  
STEM teachers

**Use case**  
Online learning platform

**Device required**  
Smartphones

**Technology**  
Data analytics, AI



## 02. Offline learning platforms

In areas with unreliable connectivity and in low-resource settings, offline digital education tools that require minimal or no connectivity ensure that students can still access digital learning content. Examples of offline learning platforms include cached learning content, one-time downloadable content or content stored on hard drives. Offline learning platforms can also be used to provide teachers in low-resource settings with access to training materials and upskilling content.

**Delivery channels:**  
PDF files, mobile apps

**Examples:**  
[ADB Last Mile Schools project](#), Philippines (basic education); [Kipin](#), Indonesia (all learning levels);

### Case study 2

## Knowledge Channel Foundation, Inc.

Accessible early childhood education for all

### Key lesson

**Legacy technologies like television can help increase equitable access to digital education**

The Knowledge Channel Foundation Inc. (KCFI) is one of the oldest education non-profit organisations in the Philippines. Founded in 1999, KCFI aims to provide transformative learning experiences for marginalised Filipino children and communities. Their key focus is on children aged 0–8 years who require holistic developmental support, including the acquisition of basic literacy and numeracy skills. KCFI first started offering early childhood education programmes over the popular medium of television, featuring a mix of animated and live learning content for young children.

KCFI's interventions in the education and teaching ecosystem in the Philippines include building a digital content library of educational videos and games, teacher training and capacity building programmes and pilot projects to deploy EdTech solutions across the country. KCFI has also worked to provide access to connectivity and education in geographically isolated areas, in some regions delivering offline learning materials and satellite dishes to access their network programmes.

As of 2024, KCFI has produced or acquired more than 3,500 video lessons and interactive games and session guides. These video lessons are accessed on-air through the Knowledge Channel TV broadcast, online and offline through Knowledge Channel TV and/or the Knowledge Channel Portable Media Library packages. More than 13,000 public schools have been provided with access to Knowledge Channel's programmes and content.



### Mode

Offline, online, on-air

### Target users

Children aged 3–18 years, educators, parents

### Use case

Offline learning, online learning

### Device required

TV, laptops, other devices

### Technology

Legacy tech (TV, radio, multimedia)



## 03. Virtual classrooms

Virtual classrooms are live-broadcasted or prerecorded lessons that can be played by teachers inside the classroom. They enhance face-to-face teaching in situations where there are shortages of teachers or low numbers of students per grade, supporting teachers to provide high-quality teaching at a range of learning levels.

### Delivery channels:

Smartphones, tablets, laptops

### Examples:

Ericsson's [Connect to Learn Initiative](#), Philippines (teacher training); [EdKasa](#), Pakistan (basic education)

### Case study 3

## EdKasa

Closing the learning gap for multigrade classrooms in remote schools

### Key lesson

**Hyperlocalised EdTech solutions that cater to specific learning contexts foster equitable impact**

EdKasa is Pakistan's leading EdTech platform. Founded in 2017, it has two solutions offerings: an exam preparation app providing video lectures, quizzes and past exam questions for each of the major exam boards in Pakistan; and Connected Classrooms, a subscription-service virtual classroom and LMS available to schools.


Connected Classrooms provides hyperlocalised learning content, including access to live virtual lectures, assessments and assignments, marking and performance tracking. The platform enables multigrade schools to facilitate student learning at the appropriate level by negating the need for schools to hire teachers for each grade, which may only have two or three students. Subscription plans are designed to be affordable to schools through the government-provided discretionary fund for teaching, available to public schools. Lesson broadcasts are available across all the examination boards and for all textbooks in Pakistan, and local instructors connect to the broadcasts via Android-powered displays.


Although lesson broadcasts are live, live student-to-teacher interactions are not facilitated. All interactions, assessments and assignments are completed via WhatsApp, including the tracking of learning outcomes. Students with below-average scores are identified to local instructors and parents/caregivers for additional support. AI is used to rapidly grade multiple choice assessments and assignments, and is being explored for use in long-form answers.


Connected Classrooms works in parallel with mainstream schools and has seen 100% improvement in English-language skills and mathematics competencies.




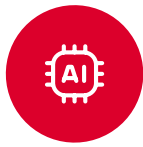
 **Mode**  
Online

 **Target users**  
Schools

 **Use case**  
Virtual classroom

 **Device required**  
Android smartphone and devices

 **Technology**  
AI



## 04. Adaptive learning

In the context of EdTech, “adaptive learning” refers to the customisation of education to meet the different needs and interests of students. A popular adaptive learning format is the use of AI to automate the assignment of learning content based on test results or learning goals, create intervention plans for underperforming students and adapt learning content to students’ needs. Personalised learning allows students to learn at their own pace, provides additional support and facilitates more engaging learning content.

### Delivery channels:

Smartphones, tablets, laptops

### Examples:

Ruangguru (AdaptoX), Indonesia (high school); Beaj, Pakistan (teacher training)

### Case study 4

## Ruangguru (AdaptoX)

AI-powered gamified learning

### Key lesson

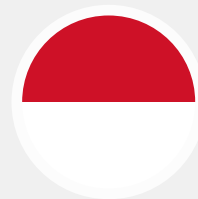
**AI has the potential to enhance existing solutions and facilitate independent and personalised learning**

Established in 2014 as an online tutor marketplace for young Indonesians, Ruangguru now provides a comprehensive suite of EdTech services to students from age three to adulthood and to teachers in Indonesia, Vietnam and Thailand. Working across three pillars (accessibility, quality and employability) Ruangguru’s service offering includes subscription-based learning videos, simulations and interactive games, live teaching, an LMS and online soft skills training.

AdaptoX is one example of the suite of EdTech solutions Ruangguru provides. Launched in 2022, it integrates simulations and interactive games in educational videos. Students can learn at their own pace by completing lessons or playing educational games tailored to their comprehension level. The AdaptoX feature is available on the Ruangguru mobile app, compatible on both Android and IOS devices.

AI is used to adapt learning videos to student needs based on their answers to mid-video quiz questions. If a student answers a question incorrectly the video will provide the correct answer. Students can request either a ‘quick’ or ‘detailed’ explanation. Once a student has completed a video quiz, they are given the option to select ‘understand’ or ‘confused’, which then determines whether the content needs to be repeated before progressing to the next task/module. As students progress through the material, the software automatically adapts quiz questions to match their comprehension.

AdaptoX has increased students’ study time by up to 86% and 92% of users have credited AdaptoX with having a substantial impact on their content mastery.<sup>49</sup>



**Mode**  
Online

**Target users**  
High school students

**Use case**  
Personalised learning, gaming

**Device required**  
Tablets, smartphones

**Technology**  
AI



## 05. Learning management systems

A learning management system (LMS) is a software application or web-based platform that facilitates the creation, delivery and reporting of learning. An LMS can be used for tasks such as developing lesson plans and learning content, assigning home and classroom-based tasks and tracking student progress. It has the potential to enhance teacher-student interactions and reduce other work demands on teachers, increasing the time they can spend on teaching and improving their ability to initiate interventions for underperforming students.

### Delivery channels:

Learning software, online platforms

### Examples:

[UNICEF Learning Passport](#), Philippines (basic education); [Edmicro](#), Vietnam; [Orenda \(Taleemabad\)](#), Pakistan (all learning levels)

### Case study 5

## Learning Passport

Providing offline EdTech solutions in remote areas

### Key lesson

### Access to customised digital content is key to technology-enabled teaching

The Learning Passport initiative was launched in 2018 by UNICEF Philippines, in partnership with DepEd and Microsoft, to provide teachers and students at the basic education level with access to digital education resources. The initiative aims to improve the teaching and learning experience in multigrade schools in the Philippines through innovative technology solutions made available offline. This was in response to the widespread destruction of schools and learning materials from Typhoon Odette in 2021, which added to the learning loss caused by the COVID-19 pandemic.

Learning Passport was developed as an LMS that offered local and customised educational content that could be accessed on tablets or smartphones without the internet. Devices are connected to a local area network (LAN). The primary objective of Learning Passport is to support teachers with classroom management in multigrade classrooms, which require them to prepare multiple lessons for different grades at the same time.

According to the 2023 Learning Passport annual report, the platform has been implemented by 96 schools in the Philippines.<sup>50</sup> Although this innovative offline solution addresses a key gap in learning delivery in the Philippines, a barrier to scaling the solution is the quality and lifespan of the tablets used in their implementations.



- Mode**  
Online, offline
- Target users**  
Teachers, students
- Use case**  
Offline learning platform
- Device required**  
Tablets, smartphones
- Technology**  
Cloud storage

50 Learning Passport. (2023). [Learning Passport Annual Report 2023](#).



## 06. Gamified learning platforms

Gamified learning platforms incorporate game elements and mechanics in learning activities to increase student engagement and motivation. Gamified learning platforms are most common in subjects like English, mathematics and science to make learning more interactive for students. They are delivered mainly via online platforms and mobile apps.

**Delivery channels:** Smartphones, tablets, laptops

**Examples:** [Knowledge Channel Foundation](#), Philippines (basic education); [Rocket Learning](#), India (early childhood education); [MEL Science](#), United Kingdom (basic education)

### Case study 6

## Rocket Learning

Using technology to address early learning gaps in India

### Key lesson

**Empowering parents/caregivers and educators with accessible tools is essential for effective early learning**






Rocket Learning, an Indian EdTech start-up founded in 2020, aims to transform early childhood education for children aged 3–6 by empowering parents/caregivers and Anganwadi (daycare) workers. Through partnerships with India’s public daycare system, Rocket Learning provides engaging, play-based content to support early learning at both daycare centres and homes. This approach helps children build essential early development skills. Currently, Rocket Learning reaches 2.5 million children across 10 states in India with their customised early childhood development content.

The platform uses activity- and play-based methods to develop foundational numeracy, preliteracy, cognitive, social, emotional and motor skills. By delivering content through WhatsApp, Rocket Learning makes it easy for daycare workers and parents to access structured learning activities. Designed to support children’s development, the content includes short curriculum videos, interactive tasks, nudges and rewards. Rocket Learning is also building a predictive AI model to serve as a personalised learning coach, adapting content based on a child’s unique needs and progress.

Rocket Learning collaborates with India’s Ministry of Women and Child Development and the Department of Education to support systemic initiatives aimed at providing equitable, high-quality early learning opportunities across underserved communities.

Children using Rocket Learning’s content demonstrate stronger language and preliteracy skills. In one study, 90% of children using the platform could describe a picture in sentences, compared to 77% in a nonuser group. Additionally, 61% of children in the Rocket Learning group could complete complex patterns, compared to 39% in the comparison group.<sup>51</sup>



-  **Mode**  
Online
-  **Target users**  
Daycare workers, parents
-  **Use case**  
Digital learning platform
-  **Device required**  
Tablets, smartphones
-  **Technology**  
Chat messaging, predictive AI

51 Rocket Learning. (n.d.). "How Rocket Learning is using WhatsApp to end learning poverty".



## BOX 2

### **AI in EdTech: emerging technologies amplify the impact of EdTech solutions**

The use of emerging technologies, such as AI, AR/VR, big data and robotics, presents an opportunity to enhance existing EdTech solutions in the Philippines (figure 6). AI-powered tools can enable personalised learning experiences for students and teachers, through use cases like intelligent tutoring systems and adaptive learning platforms. This can be particularly helpful for replicating a classroom environment when students are at different learning levels.

This study identifies a few examples of organisations that are using emerging technologies to strengthen the impact and reach of their EdTech solutions. Rocket Learning (case study 6), an EdTech start-up in India, is working on a predictive AI solution to customise their solution to the unique needs of the daycare workers and parents/caregivers who use their educational content. EdKasa, a start-up in Pakistan, is using AI to make the grading of mathematics and other binary assessments more efficient, and Beaj (case study 7), also in Pakistan, is using ChatGPT for their bilingual speech recognition software in language practise tasks.

In high-income countries (HICs), the UK EdTech start-up Kortext is using AI to create customised and interactive content for students and educational institutions from existing textbooks. In Australia, AI is powering start-up Tutoro's solution (case study 8), which provides teachers with tools to curate personalised learning materials in mathematics.

As demonstrated through various case studies in this report, there are numerous applications of AI that can be used to deliver more impactful education. Which most AI-based solutions are using predictive AI, GenAI is being increasingly leveraged for content creation, both for students and teachers in the form of lesson plans.

BOX 2

Figure 6

# AI and emerging technologies in EdTech

**Applicable use cases**

- Student learning experience
- Teaching and teacher training
- Administrative tasks

## Predictive AI

Data-driven insights and decision-making, and personalised learning

Adaptive learning platforms, virtual classrooms

Tracking student performance, anticipating gaps in learning outcomes

Data-driven administrative decision-making

## Generative AI

Creation of new content, multimedia, teacher training

Content creation and summarising, interactive and adaptive lessons

Creation of lesson plans, teaching feedback, interactive training

Curriculum development, school resource management

## Emerging AI fields

Computer vision  
Automatic speech recognition

Natural language processing  
Automatic speech recognition

AI-powered speech-to-text  
Natural language processing

AI-driven gamified educational platforms  
Online tutoring and self-learning platforms

Early identification of learning difficulties  
EdTech tools for students with accessibility needs

Grading and assessment processes  
Translation and localisation of learning content

Source: Authors' assessment.



## Case study 7

## Beaj

Upskilling teachers for education delivery in Pakistan

### Key lesson






**Messaging platforms are an accessible mode of delivery for personalised learning in low-resource regions**

Founded in 2022, Beaj is an early-stage EdTech start-up based in Pakistan. Beaj provides research-based skills development courses for teachers focussed on English-language proficiency, pedagogy and soft skills. The courses are designed to function on feature mobile phones and with limited internet connectivity, helping address the barrier of low internet connection that excludes many learners from digital education.

The Beaj app provides real-time feedback and personalised learning via a ChatGPT-powered, bilingual speech recognition software. An offline version of the app is available, enabling users to access content in a single download and substantially reducing data demands. This function does not support video content, however, and Beaj requests weekly app updates to monitor data and usage.

To improve accessibility for those with limited data, Beaj also uses WhatsApp as a delivery channel, allowing teachers to utilise their existing WhatsApp-only data packages. The WhatsApp platform offers the same functions as the mobile app via a WhatsApp delivery bot. These packages provide unlimited usage of WhatsApp and WhatsApp data for a fraction of the cost of standard data packages. To personalise learning journeys and contextualise content for individual users, Beaj has added a bilingual, voice-enabled, Chat-GPT-powered chatbot.



-  **Mode**  
Online, offline
-  **Target users**  
Teachers
-  **Use case**  
Adaptive learning
-  **Device required**  
Tablets, smartphones
-  **Technology**  
Messaging, GenAI



## Case study 8

## Tutero

AI-powered teaching assistant

### Key lesson

### AI can be an enabling tool for teachers to create engaging content

Founded in 2021, Tutero is an Australian start-up providing personalised online education and an AI-powered co-teacher platform for mathematics teachers.<sup>52</sup> Tutero launched their AI platform in the United States in September 2024.

The AI-powered teaching assistant has numerous features aimed at reducing teachers' administrative and material preparation workload, enabling them to focus on teaching. Teachers can use the software to generate lesson plans by inputting the topic, lesson structure and target skills they want to cover. They can also create individualised worksheets, selecting the complexity, duration and format based on student needs and learning levels, as well as interactive presentations. The software has a bank of thousands of ready-made questions and simulations that teachers can use for student assessments.

A key strength of Tutero is their commitment to ensuring the software has value for teachers. They are continuously working with teachers, conducting weekly user tests that encourage teachers to input their ideas and feedback. Through this model, Tutero has ensured that all student interaction components of the software are printer-compatible, allowing the option for paper-based rather than purely digital learning.



**Mode**  
Online

**Target users**  
Students, teachers

**Use case**  
LMS, online learning platform

**Device required**  
Tablets, laptops

**Technology**  
Predictive AI

<sup>52</sup> See the Tutero [website](#) for more information.



## Case study 9

## MEL Science

Combining offline and virtual solutions to deliver STEM education






### Key lesson

**Blended learning can be an effective pedagogical tool for the impactful and sustainable use of EdTech**

MEL Science is a UK-based EdTech company founded in 2015 that delivers STEM education through a combination of physical science kits and interactive VR simulations. MEL Science aims to make learning science accessible and engaging for students, especially at the secondary school level, while being affordable and easy to scale.<sup>53</sup> It also aims to address the gender imbalance among STEM students at higher education levels, by cultivating an interest in science among them and encouraging more girls to study STEM subjects. MEL Science's solution can be used by schools as part of their science classes or by students at home. Each kit consists of a physical science set, a VR headset, and an app to aid its usage. The VR headset enables students to simulate science experiments and tasks in real time.

The blended approach to learning science helps students to grasp concepts better and bridges access to digital tools for students from schools with less resources. Each learning bundle can be used by 2-4 students at one time and are priced starting at \$20.<sup>54</sup> Packages offered to schools also include an online library of more than 80 science lessons, in video or VR mode. The educational content used by MEL Science, including worksheets and recorded lessons are in accordance with the UK education curriculum and the Next Generation Science Standards (NGSS) from the United States.



-  **Mode**  
Online and offline
-  **Target users**  
Students, teachers
-  **Use case**  
Gamified learning platform
-  **Device required**  
Tablets, smartphones
-  **Technology**  
VR

<sup>53</sup> Miglani, M. (30 April 2021). "Experimenting with MEL Science: Nesta Impact Investments supports a new educational platform". NESTA.

<sup>54</sup> For more information, see the [MEL Science for Schools](#) website.

# 04. Scaling EdTech for improved education outcomes



# 4.1 Key enablers of EdTech delivery

The deployment of EdTech solutions depends on several key enablers, including the availability of devices, reliable digital connectivity and the digital skills of educators, students and parents/caregivers. The roll-out of EdTech solutions also requires a

conducive regulatory environment that promotes partnerships between the government and EdTech providers, encourages innovation and improves foundational digital infrastructure. Figure 7 outlines these key enablers of EdTech delivery.

Figure 7

## Key enablers of EdTech delivery



### Digital connectivity and infrastructure

- Mobile internet and broadband connectivity
- Access to regular electricity supply
- Cost of mobile data and internet
- Availability of devices



### Strategic partnerships

- Enabling affordable access to EdTech for schools and individuals
- Localisation of content
- Endorsement of the effectiveness of the solution



### Capacity building and training

- Digital needs assessment of teachers and schools
- Digital skills training for parents/caregivers
- School management training



### Policy and regulatory environment

- Policy incentives for schools to implement EdTech tools
- Partnerships to enhance access to internet and mobile networks
- EdTech usage and data standards

Source: GSMA Mobile for Development.



## Digital connectivity and infrastructure

The deployment of Edtech hinges on the availability, reliability and affordability of electricity, digital devices (smart TVs, tablets, phones, computers and laptops) and, in most cases, connectivity. Depending on the type of device used, the device-to-learner ratio will vary. For smart TVs or LMS, a minimum of one device per classroom is needed. EdTech that is deployed in classrooms to enhance independent learning requires higher device-to-learner ratios, increasing to one device per student for home-based solutions.

Smartphones and tablets are popular ways to access EdTech, with many solutions requiring apps or software to be downloaded. In 2023, smartphone adoption in the Philippines was 73% and is expected to rise to 78% by 2030.<sup>55</sup> While smartphone adoption is rising, there is still a gap in access and scope for low-tech mobile EdTech solutions that do not require a smartphone. Given the uneven ownership of smartphones within households as well, it is important to consider the potential of offline solutions. An example of a legacy technology-based EdTech initiative is offered by the Knowledge Channel Foundation Inc., an education foundation

offering early childhood education programmes over television, broadcasting a mix of animated and live learning content for young children.

Access to tablets and laptops is required for solutions that rely on larger screens. A stable electricity connection is also needed as smartphones, tablets and laptops have a maximum battery of approximately 14 hours, which decreases as devices age. In the absence of home-charging facilities, in-school charging or charging hubs become vital in low-resource environments such as the Philippines. According to DepEd, 90% of all public schools have access to electricity from the national grid.<sup>56</sup>

With the exception of offline solutions, most EdTech tools require a reliable broadband connection. Depending on the complexity of the solution, data demands can be high and incur high costs for learners. Rural communities in particular may be held back from using mobile internet due to factors such as affordability of devices, access to mobile data and lack of digital skills.<sup>57</sup> There is an 11% gap in the availability of smartphones between urban and rural households in the Philippines.<sup>58</sup>

<sup>55</sup> GSMA. (2024). *The Mobile Economy Asia Pacific 2024*.

<sup>56</sup> DepEd. (February 2022). "Data on electricity supply". DepEd Data Bits.

<sup>57</sup> GSMA. (2023). *The State of Mobile Internet Connectivity Report 2023*.

<sup>58</sup> Philippine Statistics Authority. (2023). Press release. "Three in every four women use smartphones".



### BOX 3

## The role of local government units in driving EdTech adoption in the Philippines

EdTech initiatives in public schools in the Philippines are largely driven by local government units (LGUs) in collaboration with the national government and private sector players. These initiatives are based on the needs of schools, teachers and students, and the specific gaps facing the education sector at provincial and local levels. The cities of Pasig in the National Capital Region and Baguio in the Cordillera Administrative Region are two examples of how the adoption of EdTech initiatives was accelerated at the local level.

To facilitate distance learning during the height of the COVID-19 pandemic, Pasig City distributed more than 140,000 tablets to students in public elementary, junior and senior schools, as well as laptops to students studying ICT.<sup>59</sup>

In 2021, Pasig City also launched the Connectivity Allowance initiative to facilitate student access to broadband.<sup>60</sup> The cash allowance scheme granted each student PHP 500 (\$8.70) per month for mobile data to facilitate communication with teachers and access to digital learning materials outside of school.

Baguio City launched the Smart Learning Communities pilot programme in October 2024, leveraging technology, data and collaborative practices to curate a supportive community of learners and educators.<sup>61</sup> As part of the pilot, teachers were offered targeted training in technology to ensure they were equipped with the skills to use the tools effectively in their teaching.

The success of such programmes depends heavily on the budgetary resources available at the local level, which varies greatly across the Philippines. As a result, schools in certain provinces gain access to EdTech tools while others continue to use more traditional teaching tools. Allocating more resources from the national government earmarked for EdTech initiatives could help address this disparity.

59 Hernandez, K. (30 September 2020). "[Pasig to distribute tablets and laptops to learners](#)". The Post.

60 For more information, see the Pasig City [Programs](#) website.

61 See, D.A. (21 October 2024). "[15 Baguio schools pilot Smart Learning Communities](#)". Herald Express.



## Strategic partnerships

Strengthening the education sector in the Philippines will, in turn, strengthen the country's future workforce, benefiting both the private and public sectors. By coming together in strategic ways to deploy EdTech at scale, public- and private-sector partners can make a long-term investment in this workforce.

There are several ways that government agencies, connectivity providers and academic institutions can come together to realise the opportunity of EdTech. For example, private partnerships can help remove the affordability barrier, particularly for those in rural regions and at the last mile. EdKasa, an EdTech solution provider in Pakistan (case study 3), partnered with TikTok in January 2022 to provide 21,000 scholarships to students using the EdKasa exam preparation app. In the Philippines, Habi Education Lab and Globe Telecom have demonstrated the value of private partnerships in upskilling teachers. As part of their long-standing partnership, during the COVID-19 pandemic and under Globe's Global Filipino Teachers (GFT) programme, the two companies created a learning series for teachers to build their capacity for remote and blended learning.<sup>62</sup>

Private partnerships can facilitate the creation of EdTech content tailored to the context in which it is offered. For example, upGrad, a start-up based in India (case study 10), is working closely with universities and industry experts across India to develop curriculum that simulates a university environment and prepares students for the workplace. Public-private partnerships (PPPs) can also support tailored content and encourage the adoption of solutions at the school level, as demonstrated by Edmicro, an LMS provider in Vietnam (case study 11).

PPPs can prove vital in the procurement and maintenance of devices, essential for the deployment of EdTech. In the Philippines, the government has established partnerships with various companies to secure donations of new and used laptops and tablets for use in schools across the country.<sup>63</sup>

<sup>62</sup> Globe. (11 December 2020). "Globe taps Habi, TFP for teacher skills enhancement".

<sup>63</sup> BDO. (August 2022). "Huawei and BDO Foundation bring laptops to schools".

## Case study 10

# upGrad

Lifelong learning partner of post-grade 12 learners in India

### Key lesson

**Strategic partnerships with the industry are important to produce relevant and future-ready content**

upGrad is an EdTech start-up based in India. Launched in 2015, upGrad provides deep learning and short certification programmes for post-grade 12 learners, including live classes, exams and grading. The courses are designed to be completed on laptops and desktops. Partnerships with universities and industry experts are leveraged to design course curriculum. The end products are courses that simulate the university environment, overlaid with in-depth industry knowledge. Programmes range from two to three days for technical courses to two to three years for master's and doctorate courses.

upGrad has three learner profiles: those seeking to pivot to another sector, those wanting to upskill for career advancement and those intending to build confidence in workplace skills. upGrads' most popular courses are data science, master's degrees in law, management courses, digital marketing and business management doctorates. upGrad also offers interview preparation through mock interviews and provides students with mentors in their chosen field.

upGrad uses an in-house LMS. The content is owned and uploaded by upGrad themselves, except for a few courses that are owned by university partners. By keeping content production in-house, upGrad can retain control over learning outcomes and course completion rates. upGrad is currently working toward university status.



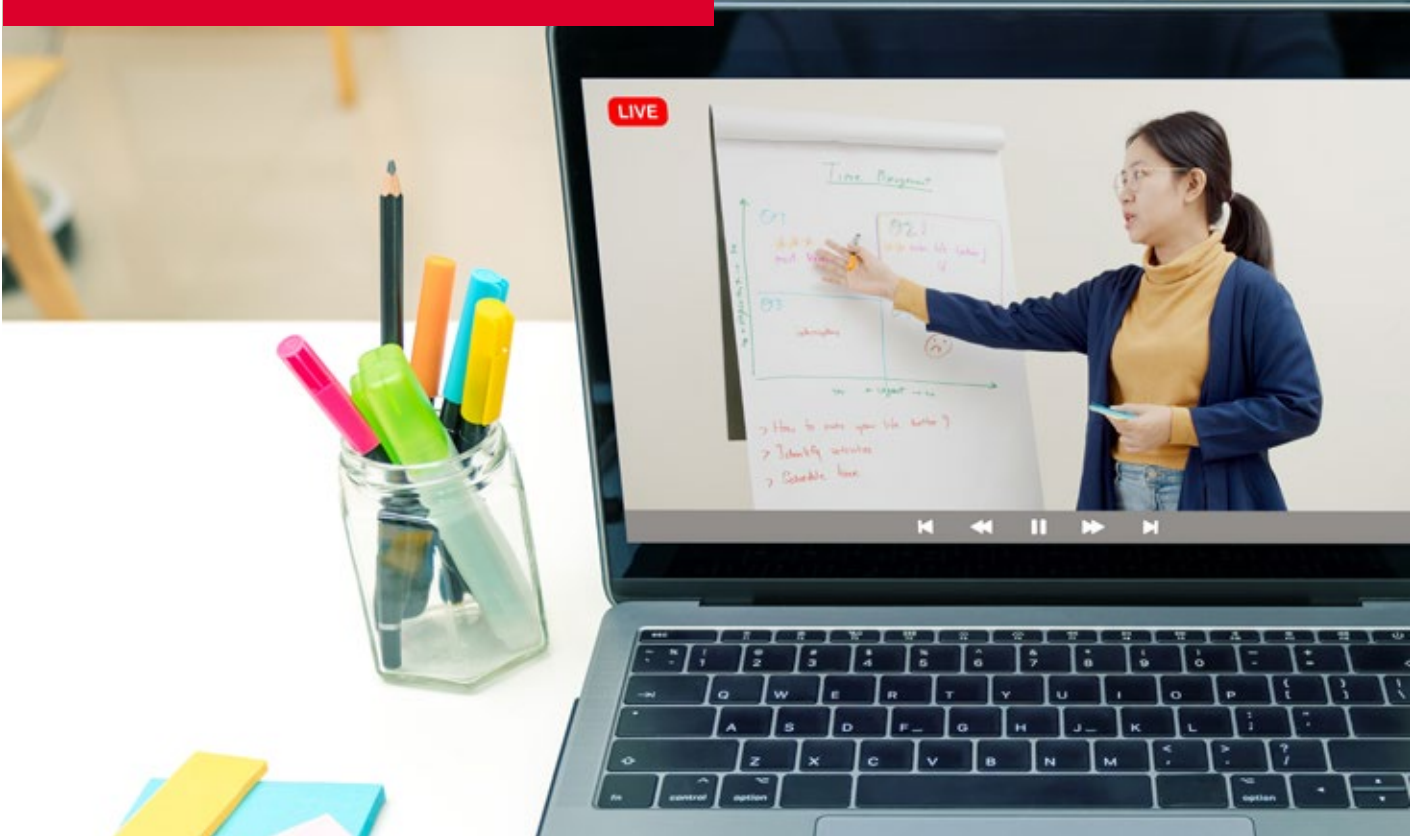
**Mode**  
Online

**Target users**  
Students

**Use case**  
Online learning platform, LMS

**Device required**  
Smartphones, laptops, tablets

**Technology**  
Data analytics



## Capacity building and training

Investing in capacity building and teacher training is a key component of building a sustainable EdTech ecosystem. Familiarising teachers with EdTech solutions and creating incentives for them to integrate the solutions in their teaching not only improves learning outcomes for students, but can also simplify or optimise their daily tasks and create more capacity for teaching. Without relevant and timely capacity building for teachers, new EdTech interventions will benefit neither students nor educational institutions in the long term. Teachers must be trained not only in the use of EdTech tools and platforms, but how to use them effectively in their teaching. For instance, in the Philippines the NGO PBEEd offers a training programme for teachers and school administrators that prepares them to implement digital education tools.<sup>64</sup> The programme is based on a needs assessment conducted by PBEEd to understand their digital skills needs, to ensure that the training effectively addresses any gaps and provides teachers with the capabilities needed to implement EdTech solutions in the classroom.

In addition to building the digital skills of teachers and training them to use EdTech tools, it is also important to build the ICT skills of students based on their grade level. For instance, younger students who are learning to use devices like smartphones and tablets must be provided with the requisite training to use the devices effectively and safely. Among older students, building skills such as prompt engineering – developing clear queries for chatbots to produce relevant responses – will help them to use GenAI tools like ChatGPT. Experts consulted for this research suggest there is a mismatch in the level of support available to students, with private schools devoting more resources to equipping students with these skills compared to public schools. Finally, building the digital literacy skills of parents and caregivers is important for ensuring that EdTech tools are delivered and used as intended.

<sup>64</sup> For more information, see [Philippine Business for Education](#).

## Case study 11

# Edmicro

All-encompassing learning management system and content creation

### Key lesson

**Rigorous teacher training and ongoing support are critical to ensure teacher-readiness to implement EdTech**

Launched in 2018, Vietnam start-up Edmicro has become an established EdTech provider supporting students, teachers and schools to improve learning outcomes. Each of Edmicro's EdTech solutions has been built to fit and improve Vietnam's education system, streamlining existing processes and supporting the delivery of more engaging learning. This is achieved through numerous business-to-business (B2B) use cases, including an LMS, personalised microlearning software, digital mock testing, online classrooms and an innovative lesson plan approval system, as well as a business-to-consumer (B2C) app.

Edmicro focuses primarily on teacher training and capacity building when onboarding new schools to use their solutions. The first step is a three-month trial and intensive teacher training period. During this time, Edmicro leverages Zalo – a popular messaging platform in Vietnam – to enable teachers to ask questions and reach out for support.

Edmicro's approach to teacher training ensures that teachers are on board with the platform, understand its benefits and are both willing and able to use it confidently and efficiently. Once the trial phase is complete, a dedicated team provides ongoing support via multiple channels like email, phone and Zalo, and will go to schools to provide additional training upon request. Edmicro has found that after one year, teachers are able to use the system comfortably with minimal need for additional training. The multiple communication channels also serve as a feedback loop, enabling impact to be measured and updated based on the needs of users.



**Mode**  
Online

**Target users**  
Teachers

**Use case**  
LMS

**Device required**  
Tablets, smartphones, hotline

**Technology**  
Data analytics

## Case study 12

# Makers Empire

3D design software for STEM

### Key lesson

**Combining classroom teaching with EdTech can accelerate STEM learning**






Founded in 2013, Makers Empire is an EdTech based in Australia offering 3D design software and accredited professional learning programmes for teachers. Makers Empire focusses on improving the spatial reasoning skills (a prerequisite for success in STEM) of students aged 5–15. The software is used in more than 50 countries by more than 28,000 educators as a teaching tool.<sup>65</sup>

The Makers Empire 3D design app, available on all major platforms, is designed for use on tablets and laptops and enables users to practise design thinking, engineering design and other STEM concepts. There are multiple subscription plans and schools have the opportunity to join Makers Empire-managed pilots and programmes.

Many of the app features work offline and content is available in multiple languages, including English, Spanish, Arabic and Ukrainian, as well as via text-to-speech. The app also has a function that enables students and teachers to visualise their designs in the real world through an AR tool built into the app or via export to third-party apps.

A study by the University of South Australia's Centre for Change and Complexity in Learning (C3L) found that when Makers Empire software is integrated in teaching, it significantly increases students' spatial orientation, spatial visualisation and mental rotation skills, and decreases anxiety felt towards STEM subjects.<sup>66</sup>



-  **Mode**  
Online/Offline
-  **Target users**  
Students, Teachers
-  **Use case**  
Gamified learning/  
offline learning  
platform
-  **Device required**  
Tablets, laptops
-  **Technology**  
AR

<sup>65</sup> For more information, see: [Makers Empire for Teachers](#).

<sup>66</sup> University of South Australia. (12 August 2022). "[Gamified education keeps kids connected to STEM](#)".



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## Policy and regulatory environment

Government support for digital education spans numerous areas, from digital infrastructure and devices to training programmes for educators, to safeguards such as cybersecurity and data privacy, to M&E mechanisms. Government agencies have an important role in developing incentives for the private sector, philanthropic organisations and civil society organisations to actively engage in the EdTech ecosystem.

Coordination between public sector entities at the national and local level is also important. Countries must put a national EdTech strategy or roadmap in place that can be adapted at provincial and local government levels. In conjunction with an EdTech strategy, adequate data governance and privacy policies that address the safe use of EdTech tools by students are equally important. While the COVID-19 pandemic hastened the use of devices

like smartphones and tablets by government departments, devices that connect to the internet must be regulated to safeguard the safety and well-being of young learners. Investing in cybersecurity programmes is an effective way for local governments to ensure this.

While most LMICs including the Philippines do not have a national EdTech policy and strategy in place, there are policies around digital transformation, data storage and privacy, e-governance, and various child protection policies that are relevant in the context of implementing EdTech solutions. These policies must be reviewed to ensure that the safe and sustainable use of EdTech in the country. Other related policies on teacher training, digital device procurement, and public sector investments must also be examined so that EdTech innovation is encouraged while having the necessary safeguards in place.

## 4.2 Designing effective EdTech solutions

Several parameters need to be considered when designing high-quality and impactful EdTech solutions. These include scalability, accessibility, environmental sustainability, affordability, inclusivity and safety and security. EdTech solutions must also show, or have the potential to show, measurable learning outcomes, which requires having M&E processes in place. Figure 8 presents the parameters and sub-parameters that may be used to measure them.

Figure 8

### Parameters and sub-parameters to measure the effectiveness of EdTech solutions



## **Measurable learning outcomes**

EdTech solutions must show, or have the potential to show, a measurable impact on improved learning outcomes for students, teacher performance or school performance. It can also be helpful to measure changes in student engagement as a result of using EdTech tools, as this can inform the design and development of new EdTech initiatives. Without a robust M&E mechanism, evidence from EdTech solution pilots and projects cannot be used to build sustainable and long-term solutions. Data from EdTech solutions that have resulted in improved learning outcomes can also be used to design and influence EdTech policies and strategies.

## **Scalable**

EdTech solutions must have the potential to be deployed at scale, especially when they are intended for public schools. Considerations include the cost of deployment, cost of usage, applicability of content across regions and appropriate capacity building and training programmes to ensure educators can implement them seamlessly. Exploring strategic partnerships to tap into delivery channels and access devices can help ensure EdTech solutions are scalable.

## **Accessible**

The accessibility of EdTech solutions is another important consideration. Effective EdTech solutions should be available on different devices, including laptops, tablets and smartphones, to address the uneven access that can result from households sharing devices. For EdTech content to be accessible on multiple platforms, EdTech providers must also consider the technical and format requirements of different platforms.

## **Environmentally sustainable**

As the use of devices powering EdTech solutions increases, concerns arise about their environmental footprint and sustainability. The lifespan of devices like smartphones, laptops and tablets is rarely more than three years, creating a need for these devices and other hardware to be serviced and repaired in schools. Having safe processes in place for the disposal of devices and other e-waste is a way to address this. For EdTech providers, exploring alternative energy sources to power their solutions, such as solar panels and batteries, is an important consideration to reduce reliance on fossil fuel, especially in geographically remote areas.

## **Affordable**

Affordability is one of the most important considerations in deploying EdTech solutions in LMICs. This includes the cost of mobile data to access the internet, the cost of devices such as mobile phones and smartphones and the cost of installing and upgrading software needed to run the solution. EdTech providers should assess their target users to ensure they do not exclude populations in low-resource settings from accessing their tools.

## **Inclusive**

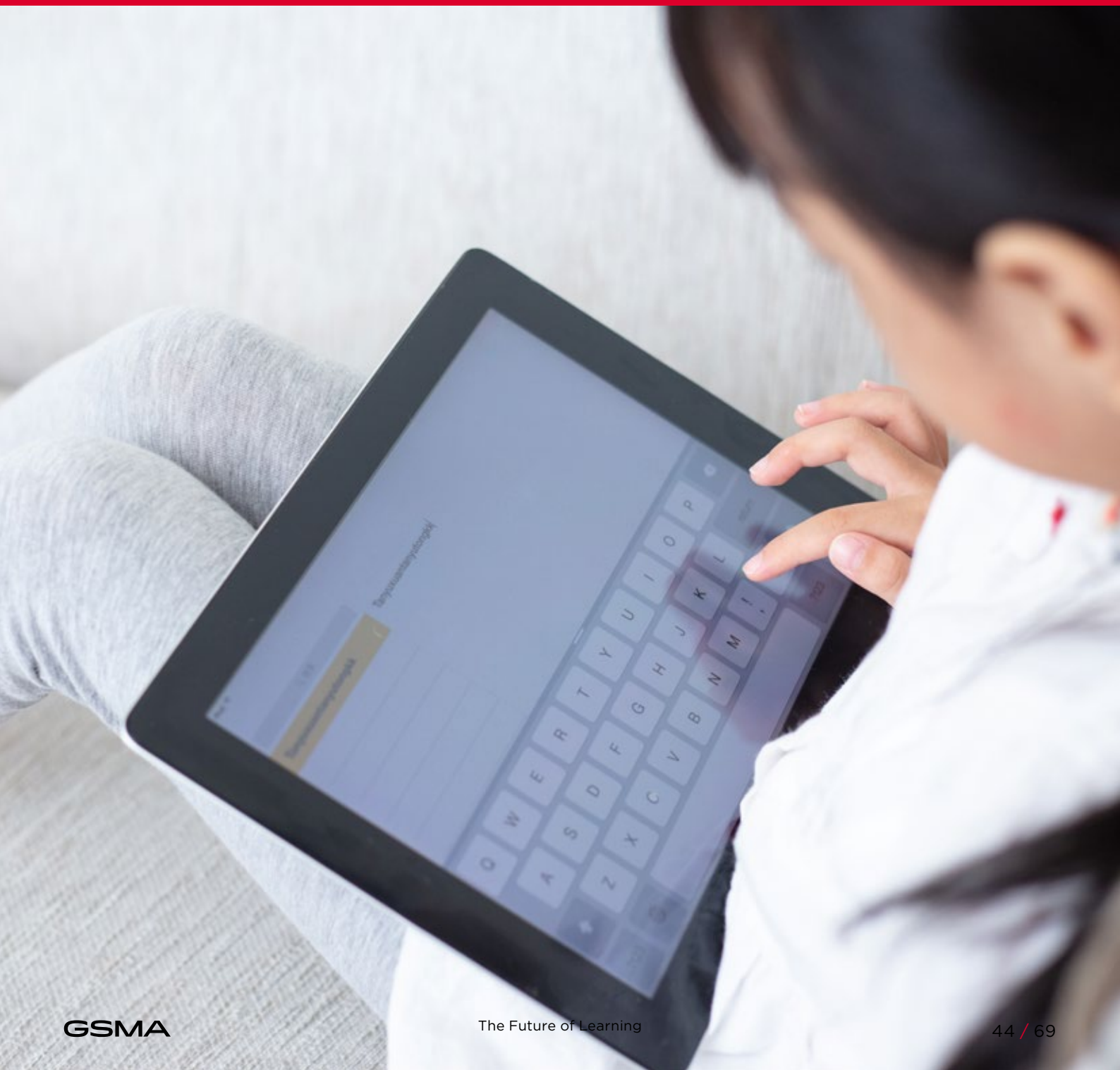
EdTech solutions must be designed with end users in mind, with easy-to-use interfaces that are easy to access on devices. EdTech solutions also have the potential to bridge usage barriers faced by students with learning disabilities, such as dyslexia, who find reading and writing challenging. EdTech can also support students with vision and hearing impairments.<sup>67</sup> Emerging AI tools like NLP and speech recognition, as well as text-to-speech, video creation software, “talking” calculators and e-books with multimedia functionality, are some of the features that could be integrated in EdTech solutions to enhance access to quality education for students with disabilities.

## **Safety and security**

Schools and EdTech providers collect vast amounts of personal data, which demands robust data governance and security processes and data privacy. Cybersecurity is a key issue, given the vulnerability of young children being exposed to the internet through devices like smartphones and tablets. EdTech solutions should include built-in tools to monitor the usage of digital platforms and regulate screen time for students.

<sup>67</sup> Coflan, C.M. and Kaye, T. (2020). “Using Education Technology to Support Students with Special Educational Needs and Disabilities in Low- and Middle-Income Countries”. EdTech Hub.

# 05. Improving adoption of EdTech in the Philippines



# 5.1 Key players supporting EdTech delivery

## Government agencies

Depending on their purview, government departments responsible for education in the Philippines have a mandate to promote and facilitate the integration of technology in the delivery of education. The DepEd, CHED and TESDA have all been active in the promotion of EdTech over the past 25 years.<sup>68</sup>

The school closures that were necessary during the COVID-19 pandemic expedited the deployment of EdTech and, post-COVID, the government has been exploring additional use cases to improve learning outcomes and reduce inequalities in education across the country. Table 2 outlines the key governing bodies for education in the Philippines and their associated mandates and priorities.

Table 1:

### Key governing bodies in the education sector in the Philippines

Governing body	Mandate	Key activities and priorities
<b>Department of Education<sup>69</sup></b>	DepEd is tasked with the management of the basic education system, including both public and private schools.	Applies to students in formal education aged 5-18 and youth and young adults in informal education
<b>Commission on Higher Education</b>	CHED is responsible for the promotion and quality of higher education, with the aim to advance learning and research, educate high-level professionals and enrich historical and cultural heritage.	Ensure access to quality higher education, guaranteeing and protecting academic freedom  Advance learning and research, educate high-level professionals and enrich historical and cultural heritage
<b>Technical Education and Skills Development Authority</b>	TESDA is mandated to manage technical education and skills development. The agency also implements programmes such as proactive job matching, training and institutional capacity building and manages a skills certification system.	Proactive job matching, standards setting and systems development, training (school, community, centre and enterprise) and institutional capacity building  Massive Open Online Courses (MOOCs) offered through the website

68 USAID. (2020). [EdTech Ecosystem Report: Philippines](#).

69 For more information, see the [DepEd](#) website.

## Overview of basic education

DepEd is active in the implementation of EdTech and leads several initiatives to roll out the use of digital technologies in education. For instance, in early 2024, they announced DIGI-ED 2028, a project to fully digitalise all DepEd offices and schools nationwide, and the launch of a MATATAG (stable) portal. Through this initiative, DepEd has pledged to provide e-books to schools and to modernise assessment systems using computer-based technologies; use AI in teaching and learning; and provide Wi-Fi in all schools and digital tools for students with disabilities to improve inclusion in education.<sup>70</sup> Other initiatives include the Department of Education Computerization Program (DCP), which provides hardware to public schools.

The Basic Education Development Plan (BEDP) 2030,<sup>71</sup> launched in 2023, is the first long-term plan implemented by DepEd and serves as a roadmap to improve learning outcomes through quality education. The plan covers four pillars: access, equity, quality and resilience, and the scope covers formal education from ages 5-18 and nonformal education for youth and adults. The plan also intends to maximise the use of EdTech solutions for remote learning and build an evidence base for the use of technology in education.

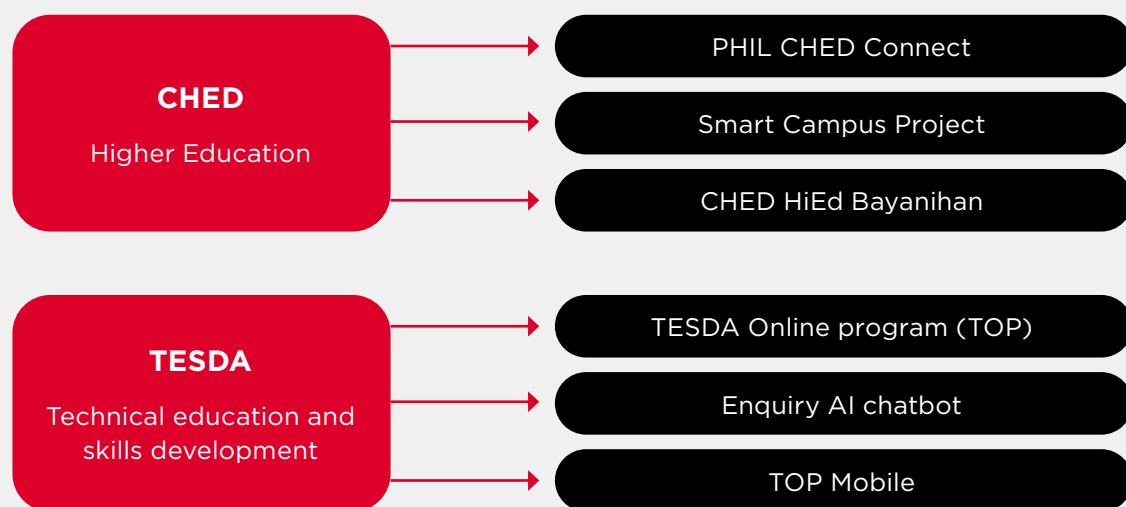
CHED and TESDA are both active in the deployment of technology to facilitate and improve their respective educational responsibilities. Figure 10 presents some key EdTech initiatives implemented by the two agencies.

DepEd, CHED and TESDA have each implemented their own EdTech initiatives, but progress has varied widely both between and within the agencies. As a result, the deployment of EdTech in the Philippines remains piecemeal and its potential to improve learning outcomes and inclusion in education has yet to be realised.

Other government agencies also have initiatives to improve the integration of technologies in education. One example is the Department of Science and Technology's SEI Courseware Project, which developed digital teaching materials for subjects like mathematics and science.<sup>72</sup> These materials are available on platforms such as Google Play and are designed to support teachers and students by aligning with DepEd's learning competencies. The course was developed with accessibility in mind, as it can be used on mobile devices, making it more available to students in areas where access to traditional resources is limited.

Figure 9

### Current EdTech initiatives implemented by CHED and TESDA



Source: GSMA Mobile for Development

<sup>70</sup> Hernando-Malipot, M. (25 January 2024). "DepEd eyes full digitalization, interconnectivity of offices and schools through 'DigiEd 2028'". Manila Bulletin.

<sup>71</sup> DepEd. (2022). [Launching of the Basic Education Development Plan 2030](#).

<sup>72</sup> For more information, see [Access to Resources and Innovations in Science Education \(ARISE\)](#).

## Notable EdTech initiatives of TESDA

TESDA implements programmes such as proactive job matching, training and institutional capacity building in addition to managing a skills certification system.

TESDA operates the TESDA Online Program (TOP), which offers MOOCs. A range of courses are offered, and participants are issued a certificate upon course completion, with the opportunity to take a face-to-face assessment to obtain a national certification.<sup>73</sup> The TESDA Online Mobile Program was launched in 2022 to increase access to its MOOCs.<sup>74</sup> Courses are available via the TESDA mobile app, which allows offline downloads of materials up to 5 MB.

TESDA is in the process of implementing emerging technologies in their programmes. In September 2023, extended reality (XR), a combination of VR and AR, was integrated in TVET and assessment. For example, the technology is used in heavy equipment operations training to simulate hazardous environments. XR also enables more interactive and engaging remote learning.<sup>75</sup>

In early 2024, TOPE, a pilot of an AI chatbot pilot with language translation capabilities, was launched. The chatbot is used to answer questions from users and preliminary results suggest that it has cut email enquiries by 50%.<sup>76</sup>

## Non-governmental actors and international development organisations

Academia and civil society organisations are actively involved in promoting and supporting the use of EdTech. Entities spearheading these initiatives include universities, NGOs, research organisations and philanthropic organisations, including international development organisations.

Within academia, the development, deployment and evaluation of the use of technology in education is a key research area. The Philippine Normal University conducts active research on the development of PC- and mobile phone-based educational technologies for senior high schools. Other universities involved in the research and development of EdTech are Ateneo de Manila University and Silliman University. Universities also play a key role in testing the applicability of emerging technologies like AI and AR/VR technologies to power EdTech solutions, as well as convening innovators working on similar themes.

Among NGOs and non-profit organisations, Khan Academy Philippines (KAP) offers solutions like Khanmigo, a personalised learning solution. KAP, in partnership with DepEd, is currently deploying a pilot programme for grades 4–6 that provides remedial learning for mathematics and science. Other players include the Gokongwei Brothers Foundation (case study 1) and the Ayala Foundation.<sup>77</sup> In addition, international development organisations, including the FCDO, UNICEF, Asian Development Bank (ADB) and the United States Agency for International Development (USAID), have undertaken a mix of research and programmatic interventions to advance the use of technology in the education sector. Through strategic partnerships, these organisations work with governments and private sector actors to develop, pilot and deploy EdTech solutions across the Philippines.

<sup>73</sup> Global Education Monitoring Report Team and Philippine Normal University. (2024). [Technology in education: a case study on the Philippines](#). UNESCO.

<sup>74</sup> For more information, see [Media on the TESDA website](#).

<sup>75</sup> Abad, R. (16 September 2023). "TESDA pioneers usage of XR tech in TVET". BusinessMirror.

<sup>76</sup> TESDA. (13 January 2024). "TESDA reveals improvements to online training program".

<sup>77</sup> For more information, see [ProFuturo](#).

Regional organisations focused on education are also involved in supporting the education and EdTech ecosystem in the Philippines. The Southeast Asian Ministers of Education Organisation (SEAMEO), among other initiatives, is involved in implementing the ASEAN-UK Supporting the Advancement of Girls' Education (ASEAN-UK SAGE) which aims to address barriers of access to education for girls across Southeast Asia.<sup>78</sup> SEAMEO Innotech (Regional Center

for Education Innovation and Technology) conducts evidence-based research and capacity development programmes for teachers and supports innovation in education through funding and technical assistance.<sup>79</sup> Another example is the Asia South Pacific Association for Basic and Adult Education (ASPBAE) a regional network of civil society organisations that works on policy advocacy, capacity building, and facilitates strategic partnerships in the ecosystem.<sup>80</sup>

## Private sector organisations

In addition to government and civil society organisations, the private sector has a key role to play in the EdTech ecosystem. Private sector actors can form sustainable partnerships with both government and philanthropic organisations to deploy EdTech solutions at scale. They can also help address some of the foundational barriers to EdTech adoption, such as access to connectivity and digital infrastructure. For instance, telecoms like Globe Telecom and SMART PLDT have implemented several programmes in partnership with DepEd, including providing internet connections to schools, conducting ICT training programmes for teachers, contributing to DepEd's digital public library during the COVID-19 pandemic and, more recently, launching their own digital platforms with easy-to-access educational resources like YouTube, Udemy, Google Workspace and Canva. Globe Telecom has partnered with private sector actors like KAP to offer their online education content on Globe's platform. The involvement of MNOs is critical in expanding the reach of EdTech programmes and ensuring the cost of using them remains low.

Other private sector actors, like the conglomerate Ayala Corporation, work in partnership with the government and philanthropic organisations to support the implementation of EdTech.

For example, through their energy platform ACEN, the Ayala Group supported Xavier School Nuvali in the Laguna region to switch to entirely renewable energy.<sup>81</sup> Renewable energy technologies like solar panels can be vital in enabling EdTech-supported learning to continue in the aftermath of extreme weather events like typhoons, as they provide a stable electricity source.<sup>82</sup> Electricity also enables teachers to use devices like printers, so they can print activity sheets or exams.

Many companies, through their corporate social responsibility (CSR) offices, have included EdTech programmes as part of their impact portfolios. Key activities include building computer laboratories, helping with content creation or providing portable technologies to last-mile schools. In some cases, they also provide tablets to students to access online education platforms. Big Tech players like Google and Microsoft have worked in collaboration with the Government of the Philippines to provide access to their online learning platforms and train teachers in advanced skills, including AI.<sup>83</sup> For example, Microsoft partnered with UNICEF and DepEd to power the Learning Passport initiative (case study 5), which used an LMS to provide customised digital education to students in low-resource areas.

<sup>78</sup> For more information, see [SEAMEO Secretariat](#).

<sup>79</sup> For more information, see [SEAMEO Innotech](#).

<sup>80</sup> For more information, see [ASPBAE](#).

<sup>81</sup> ACEN RES. (27 February 2024). "[Xavier sets an example for schools with a 100% shift to renewable energy](#)".

<sup>82</sup> Mascariñas, E.M. and Mangadlao, I.M. (18 December 2022). "[Solar power fuels Surigao island's rise from Odette](#)". [Inquirer.net](#).

<sup>83</sup> Microsoft Philippines Communications Team. (30 April 2024). "[Microsoft announces AI skilling opportunities for 2.5 million people in the ASEAN region by 2025](#)".



## 5.2 Strengthening EdTech delivery in the Philippines

### Connectivity and infrastructure

Connectivity and infrastructure are among the most critical barriers to the advancement of EdTech in the Philippines, particularly in rural and underserved regions. Despite efforts by the government to provide schools with computers, tablets and internet connectivity, these resources are often insufficient, especially in rural schools where connectivity infrastructure is limited.

According to experts consulted for this report, approximately 70% of schools in the Philippines are connected to the internet. However, even when schools have an internet connection, it is often limited to administrators or teachers and, in some cases, restricted to one room. In the absence of Wi-Fi infrastructure, rural schools must depend on mobile data, which is both expensive and often unstable, restricting the ability of teachers to use online platforms or access cloud-based resources for teaching and learning. Without the necessary infrastructure to implement more advanced technologies, communication and learning often rely on feature mobile phones.

In 2018, the Department of Information and Communications Technology partnered with the United Nations Development Programme (UNDP) to accelerate the Pipol Konek (free Wi-Fi for all)

initiative, which aims to provide free public Wi-Fi to all citizens in public spaces, including public basic education institutions.<sup>84</sup> In December 2022, 6,000 last-mile sites were connected, although it is unclear whether further progress will be made. There is a need to prioritise initiatives such as this to prevent last-mile schools in remote areas from falling even more behind in access to EdTech. One promising initiative is the EdTech Solutions for Last Mile Schools in COVID-19 pilot project (case study 14), conducted by the ADB in 2020 to develop content, build teacher capacity and test EdTech solutions in last-mile schools in the Philippines.

Device ownership in schools is not currently sufficient to scale EdTech across the Philippines. Initiatives such as DCP provide schools with between 12 and 50 computers regardless of student numbers, leading to a surplus in some schools and high student-to-computer ratios in many others. Rural public schools often supplement laptop ownership with donations from government programmes or private companies. However, outdated software on these devices prevents long-term use, and there are insufficient funds to maintain or replace them. Some schools also lack the basic infrastructure to support the use of these computers, such as a consistent power supply and secure storage facilities.

<sup>84</sup> For more information, see [Pipol Konek](#).

### Case study 13

## Kipin

Offline learning materials downloadable via kiosks

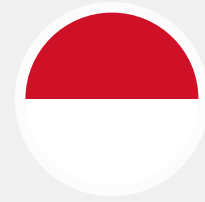
### Key lesson

### Offering offline EdTech solutions is key to scaling impact in low-resource settings

Launched in 2016, Kipin is an Indonesian EdTech that bridges educational gaps in regions with limited or unreliable digital infrastructure through four key service offerings: Kipin ATM, Kipin School, Kipin Classroom and Kipin PTO-Cloud. Each contains a massive database of learning resources, including textbooks, videos, practise questions and literacy comics, all in line with the national curriculum.

The key function of Kipin's suite of EdTech products is that they can operate both online and offline.<sup>85</sup> Kipin Classroom allows students to download content via IoT onto their device (laptop, tablet or mobile) for later use outside the classroom without the need for an internet connection. Kipin PTO-Cloud, an assessment system, operates entirely offline, enabling teachers to assign exams and quizzes, as well as track progress, generate reports and provide feedback to students.

By May 2024, Kipin had reached 3,000 schools and more than 350,000 teachers across Indonesia and continues to expand.<sup>86</sup> Their solutions are helping schools and students in low-resource, low-connectivity areas across Indonesia to access digital education materials, ensuring they are not left behind and can seize the opportunity that EdTech presents.



- Mode**  
Offline, online
- Target users**  
Students, teachers
- Use case**  
Offline learning platform, online learning platform
- Device required**  
Digital kiosks
- Technology**  
Cloud computing, IoT

85 Pendidkan.id. (6 September 2023). "[Kipin Classroom: Revolutionising school digitalisation in Indonesia with a complete offline solution](#)".

86 Sync. (29 May 2024). Press release. "[Kipin listed as the World's top edtech companies 2024, on its journey towards providing equal learning opportunities in Indonesia](#)".

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## Strategic partnerships

The Philippines has a collaborative environment for the deployment of EdTech, with private companies, academic institutions and government agencies working together to implement various initiatives and programmes. However, more can be done to remove the silos in which these stakeholders still work and build strategic partnerships to alleviate the challenges faced by the education sector.

DepEd's recent partnership with KAP is a prime example of an ongoing PPP that has helped to scale up EdTech in the country. The partnership was formalised in August 2023 to pilot an online learning platform for mathematics education in public schools.<sup>87</sup> With the support of the government, schools were given the opportunity to participate in the pilot to determine its usability and effectiveness in improving learning outcomes. A variety of short-term partnerships have been established to support device procurement, such as between Huawei, the BDO Foundation and DepEd in 2022, under which Huawei donated new laptops to five school divisions across the country.<sup>88</sup>

MNOs such as Smart Communications and Globe Telecom have also contributed to the procurement of devices and development of digital infrastructure through their CSR programmes, offering mobile learning devices and infrastructure to remote schools. However, these important initiatives have faced sustainability challenges and many school districts still struggle to procure devices suited to their context.

Local government agencies have also been active in forming partnerships with civil society organisations and international development organisations to implement EdTech solutions in their region. An example is UNICEF, which has partnered with LGUs across the Philippines to develop digital learning resources, including apps and courseware designed specifically for elementary education. While these partnerships are essential, stakeholders have found it challenging to make them sustainable, as they often rely on external funding without long-term maintenance plans.

Along with partnerships between stakeholders within the country, there is a potential for EdTech providers to work together across markets and strengthen their individual offerings. Lessons may be learned from other LMICs where EdTech providers are facilitating knowledge exchanges and strategic partnerships to enter into newer customer markets. A recent example is that of Pakistani EdTech startup Knowledge Platform's merger with Kenyan EdTech Eneza Education.<sup>89</sup> Knowledge platform is a platform for gamified digital learning while Eneza Education is a mobile-first platform that provides learning support to students through SMS technology. The combined entity aims to develop culturally relevant and affordable content for students in underserved areas across the two continents.

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<sup>87</sup> Philippines Department of Education. (5 August 2024). Press release. "[DepEd strengthens digital education efforts, partners with Khan Academy](#)".

<sup>88</sup> BDO News. (August 2022). "[Huawei and BDO Foundation bring laptops to schools](#)". School divisions that have received donated laptops include Beneguet, Lanao del Sur, Negros Oriental, Palawan and Quezon.

<sup>89</sup> Ekhaton, O. (30 October 2024). "[Kenya-Pakistan edtech merger aims to transform learning for Africa and Asia](#)." Techpoint Africa.

## Case study 14

# ADB EdTech project

Remote online education access at the last mile

### Key lesson

**EdTech interventions must be adapted to the context of end users**

The Asian Development Bank (ADB) has been involved in several research studies and EdTech interventions in the Philippines. In the wake of the global COVID-19 pandemic, schools in remote areas in the Philippines experienced the greatest learning loss given the lack of connectivity and devices available to students. In response, the ADB launched the EdTech Solutions for Last Mile Schools in COVID-19 pilot project to make learning accessible to students in last-mile schools both during and after the pandemic. The project covered 21 schools across the Philippines in the Abra, Bohol, Kalinga and Zamboanga Sibugay provinces.<sup>90</sup>

Last-mile schools are defined by DepEd as schools with fewer than four classrooms, no electricity and minimal access to essential equipment, among other factors. As part of the intervention, the ADB team had LAN access points installed in schools to provide internet connectivity. The ADB also digitalised learning content in English, science and mathematics for teachers to share with their students – a total of 271 materials assigned via EdTech over the course of the project.<sup>91</sup>

While the project started off by providing students with tablets so they could download learning content (regularly updated by teachers) through an LMS called Moodle, the pilot project had to be adapted after the Philippines announced a back-to-school policy. The project team upgraded the Moodle platform to include face-to-face instruction and extended LAN facilities to campus-wide Wi-Fi systems.

The final stage of the intervention was to conduct capacity building and training sessions for teachers and school officials on blended learning to ensure the EdTech solution would be used beyond the life of the project.



- Mode**  
Online, offline
- Target users**  
Teachers, students
- Use case**  
Online learning platform, LMS
- Device required**  
Tablets, laptops
- Technology**  
Cloud storage, data analytics

<sup>90</sup> NIRAS. (30 August 2023). "Making distance learning possible for hard-to-reach, under-resourced and often makeshift schools".

<sup>91</sup> NIRAS. (27 December 2023). "Education technology pilot project in the Philippines wraps up with a promise of continuity".



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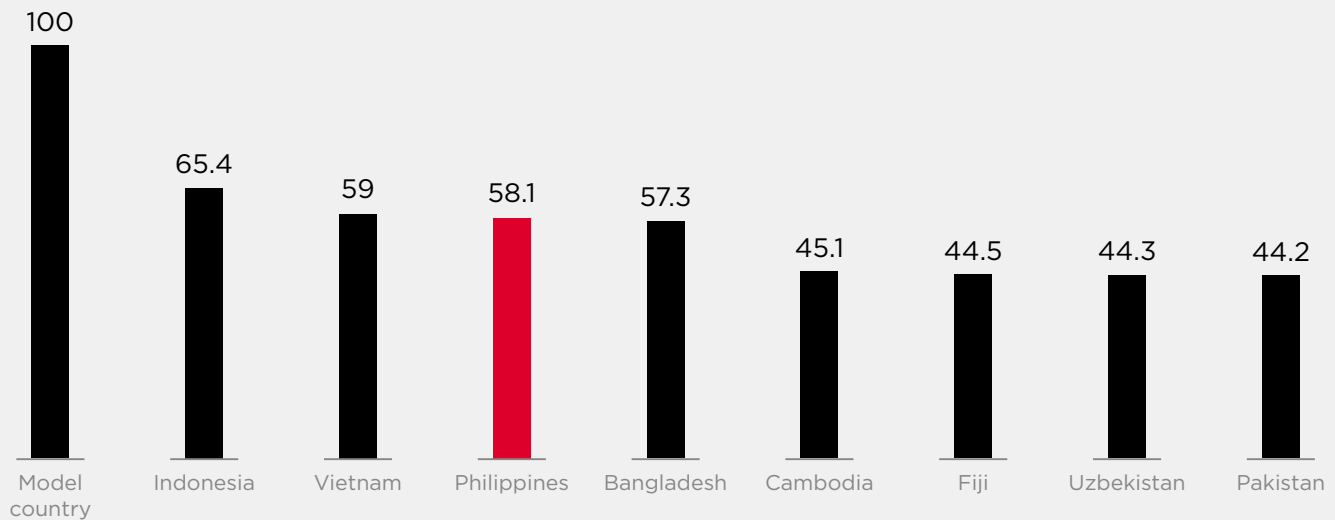
## Capacity building and training

Capacity building and training for teachers have become one of the most pressing challenges in the implementation of EdTech solutions in the Philippines. The limited scope of teacher training programmes, inadequate preparation to adopt EdTech tools and a mismatch between the digital needs of teachers and available training programmes are some of the key barriers. While DepEd has policies that mandate ICT training for all teachers, these programmes are not implemented consistently across schools. As a result, many teachers, especially those nearing retirement or with less exposure to technology, struggle to integrate digital tools in their teaching practices. This has created significant gaps in teachers' abilities to use technology effectively in the classroom.

These gaps are most pronounced for teachers in rural areas and particularly in rural public schools, where teachers receive very little training in the use of EdTech. In remote areas, lack of access to relevant teacher training is compounded by lack of access to resources during training sessions. In rural public schools, teachers often do not have access to functional computers or stable internet connections. Without these essential resources, the effectiveness of any training is severely limited as teachers cannot practice or apply what they have learned. Even when computers are donated to schools, they often remain unused due to a lack of proper training in how to operate them. When teachers do use technology, it is often limited to replacing Manila paper and blackboards. Another significant barrier to effective teacher training is resistance to technology adoption, particularly among teachers from traditional teaching backgrounds.

Figure 10

## The ADB Digital Education Readiness Framework: School and teacher scores



Source: ADB. (2023). *Toward Mature Digital Education Ecosystems: The Digital Education Readiness Framework*

Existing capacity building and training programmes are considered insufficient for preparing teachers to use EdTech solutions. In addition, given that most EdTech solutions are being implemented for reading, English, mathematics and science, specialised training in fields like STEM is critical. Similarly, introducing more training programmes for teachers on the basics of emerging technologies, such as robotics and AI, can play a significant role in preparing them to use more advanced EdTech tools. Emerging technologies have the potential to enhance learning outcomes in the short term but, without targeted training, many teachers are unable to fully utilise them in their classrooms.

Emerging technologies also have the potential to enhance learning platforms for teacher training programmes. While online training modules were adopted after the COVID-19 global pandemic, most organisations have now reverted to holding in-person teacher training programmes. A new approach to simulating teacher training on an online platform was piloted by Ericsson in the Philippines, in partnership with Qualcomm Wireless Reach, Smart Communications Inc., the Philippine

Normal University, and Muntinlupa Department of Education.<sup>92</sup> The training provided teachers with a VR headset to enter a virtual world where they could practice their classroom management skills and experiment with integrating EdTech tools like online quizzes, learning videos, and games in their teaching. Selected public school teachers and teachers-in-training were selected for this pilot project. Another example is seen in the UK, where the government has partnered with Oak National Academy, an EdTech company to support teachers in planning their lessons and providing access to online curriculum resources, as a step towards providing every teacher with a personalised AI lesson-planning assistant.<sup>93</sup>

To ensure that teachers are ready and feel confident with integrating EdTech solutions in the classroom, it is important to understand their needs and include their perspectives in designing digital and EdTech training programmes and training materials. There is also a need for structured professional development programmes to incentivise teachers to upskill themselves and boost their confidence to use digital and emerging technologies in their classrooms effectively.

<sup>92</sup> Alarilla, E. (24 January 2023). [How virtual reality for teachers can improve quality of education](#). Ericsson Blog.

<sup>93</sup> Department for Education. (30 October 2023). Press release. ["New support for teachers powered by Artificial Intelligence"](#).

## Case study 15

# Orenda

Using AI to develop textbook-based lesson plans for teachers

### Key lesson

## Digital content creation is a key use case for Generative AI in EdTech

Start-up Orenda launched the Taleemabad app in 2015 to bridge the learning gap and empower educators through EdTech solutions and teacher training in Pakistan. The Taleemabad platform has seen considerable traction, with 77% and 80% of educators reporting increased productivity and classroom engagement, respectively.

Taleemabad provides structured lesson plans aligned with the national curriculum, textbooks and different classroom contexts. It currently takes Orenda about six to eight months to generate these lesson plans. To make this process more efficient, Orenda is developing a tool that uses AI to extract data directly from textbooks. This involves converting PDF books into images, transcribing text, identifying exercises and organising the data outputs using Generative AI (GenAI). The lesson plans are currently available in English and Urdu, and Orenda is exploring how to incorporate local languages such as Baluchi, Sindhi and Pashto.

Although still in development, the AI tool is proving successful in generating text and, with more refinement, is expected to generate images for lesson plans. Further research is being conducted to assess the capability of AI models to generate pedagogically sound content that is adaptable to various contexts.



### Mode

Online

### Target users

Teachers, students

### Use case

Online learning platform, LMS

### Device required

Smartphones, tablets, laptops

### Technology

GenAI

## Customised content and curriculum

A key success factor identified by EdTech stakeholders is having access to EdTech content that is customised to specific grade levels and competencies. This is especially useful in multigrade classrooms where teachers must revise content for each grade. Making content available in local languages is also important to increase the engagement of students and parents/caregivers. Some initiatives in the Philippines, such as the GBF's Class Builder and UNICEF's Learning Passport are helping teachers access customised content for specific grades and regions. In the higher education space, UK EdTech company Kortext (case study 16) provides students with access to online textbooks, using GenAI to create customised summaries and educational videos.

### Case study 16

## Kortext

Providing customised digital textbook content using GenAI

### Key lesson

**Digitalisation of existing content is essential to expand access to EdTech solutions**

Kortext is an EdTech company based in the UK that provides a personalised learning platform for students and higher education institutions. Founded in 2013, Kortext works with major academic publishers to provide offline and online e-textbooks on their platform. For students accessing their platform, Kortext offers a range of value-added services and interactive study tools. These include AI-generated study notes, summaries of textbook sections, interactive questions to test students' knowledge and educational videos. AI is also used to translate content into more than 130 languages, extending access to students around the world.<sup>94</sup>

Kortext operates strictly within their own platform, using AI tools for academic sources they already have access to. This limits the chances of false information being generated for students. Kortext has partnered with Microsoft to use the Azure platform for their AI tools, using their GPT4o technology.

As of 2024, Kortext has developed more than 17,000 open access materials from more than 8,000 publishers, and their learning materials are accessed in more than 100 countries.



#### Mode

Online, offline

#### Target users

Students, higher education institutions, libraries

#### Use case

Adaptive learning, digital learning platform

#### Device required

Smartphones, tablets, laptops

#### Technology

Data analytics, GenAI

<sup>94</sup> For more information, see [Kortext study+](#).

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## Policy and regulatory environment

The lack of a unified national EdTech strategy to guide provinces and LGUs in the implementation of EdTech solutions is one of the key barriers to scaling adoption. EdTech interventions are being implemented in silos, with different government agencies working with private sector and philanthropic partners to roll out digital education programmes. LGUs, meanwhile, are using their own discretionary funds to experiment with innovative solutions and tools at the community level. Without a directive from the national government about the EdTech tools and solutions that should be implemented across the board, efforts to integrate EdTech in schools will remain piecemeal.

This challenge has been compounded by a disconnect between national policies and implementation at the local level. While DepEd has issued directives on the use of technology, the focus is often on providing hardware without addressing the need for accompanying software, teacher training or technical support. While some local governments have launched their own EdTech initiatives, LGUs without access to local resources and funding cannot implement similar programmes, exacerbating the inequality of EdTech adoption across the country.

EdTech initiatives launched by LGUs but not integrated in DepEd's system can limit their reach and impact, weakening their effectiveness.

The Philippines government has taken a step towards addressing existing silos in the education sector by the formation of a Cabinet cluster for education.<sup>95</sup> The Cabinet cluster would include the DepEd, CHED, TESDA, the Department of Labour and Employment, and the Department of Budget and Management, and aims to develop an integrated approach to implementing education initiatives in the Philippines.

There is a need for concerted collaboration, both within government agencies and between public and private sector actors. Stakeholders reported an "environment of distrust" in the EdTech ecosystem, leading to a duplication of efforts and lack of information sharing among key players. To build trust between the government and private-sector actors, policies around digital hardware procurement, intellectual property of EdTech content and data storage and privacy must be revisited to ensure EdTech initiatives have standardised processes.

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<sup>95</sup> Gita-Carlos, R. (13 August 2024). "[PBBM Oks 'in principle' creation of Cabinet cluster for education](#)". Philippine news agency.

# 06.

## Key findings and recommendations



**Based on interviews with key informants and EdTech providers, this section presents key findings and recommendations for improving EdTech adoption in the Philippines, which may be applicable in similar contexts across LMICs.**

## Key finding:

# EdTech has been widely implemented in the Philippines, but there is limited knowledge sharing on learning and best practices and a lack of impact evidence

In the Philippines, a variety of actors have launched EdTech initiatives, from government agencies like DepEd and TESDA, to philanthropic organisations, international development partners and MNOs. However, these efforts have been fragmented, spanning different levels of government, regions and end users, and use a wide range of technological innovations. The country does not have a centralised database that keeps track of EdTech solutions and pilot projects. This creates barriers to knowledge sharing and a lack of evidence of the impact of EdTech initiatives. Important nuances such as implementing EdTech in urban versus rural regions, the digital gender gap and the comparative effectiveness of different technologies, are lost as a result.

### Recommendation

Establish a uniform M&E process and impact measurement metrics to measure the progress and impact of ongoing EdTech interventions, to inform future efforts and identify gaps effectively.

### Relevant actors

Government agencies, philanthropic organisations, research and policy organisations, international development partners.

### BOX 6

#### Data is critical to address the fragmented implementation of EdTech

The availability of digital data on schools and students is a key gap in the education sector in the Philippines. It is important that the government prioritises the digitalisation of existing data records and puts processes in place for data storage and data governance. Technology can play a key role in increasing the availability of data on school resources and student performance. This, in turn, can be used to review education policies at local and national levels and design new EdTech interventions to improve learning outcomes. Data is an important tool to sharpen the policymaking process and must be freely available in a uniform format and across different implementing agencies.

## Key finding:

# Teacher training and capacity building efforts are not equipping teachers to implement EdTech in schools

There is a need to assess the relevance and scope of teacher training and capacity building programmes in the Philippines. Key informants in this report observed that while DepEd mandates ICT training for teachers, these programmes are not implemented consistently across schools and regions, especially in rural areas. As a result, teachers do not feel adequately prepared to adopt EdTech tools in their pedagogy. At the same time, international development partners and philanthropic organisations conduct their own teacher training and capacity building in an ad hoc manner, as part of their interventions. Public school teachers are therefore required to learn how to use multiple EdTech tools without structured follow-up training, adding to their already-demanding workdays. Teachers need incentives to adopt and use EdTech tools consistently. It is also critical to include teachers' perspectives and needs in the design of EdTech solutions. Conducting a needs assessment exercise with teachers when devising training programmes is an important step toward understanding their digital capabilities and gaps.

## Recommendation

Review teacher training and capacity building programmes to address gaps in digital capabilities and equip teachers to effectively integrate EdTech in their pedagogies.

## Relevant actors

Government agencies, capacity building institutions, EdTech providers, international development partners.



## Key finding:

# EdTech solutions are not always designed to reflect the learning environments of students, resulting in low student engagement

The measurement of student engagement is a key feature of effective EdTech initiatives. While learning outcomes are measured at the end of EdTech projects, student engagement and motivation to use EdTech tools must be observed throughout their implementation. Key informants in this study reported that EdTech solutions do not always reflect the reality of students, leading to low engagement and motivation. For instance, most online learning platforms are built for one-to-one engagement between a student and a device, but schools in the Philippines do not have enough devices. EdTech solutions designed for use in contexts where access to devices may be uneven should have interfaces that allow multiple students to be engaged simultaneously, fostering collaborative rather than strictly independent learning while also having a positive impact on learning outcomes. Other factors that may affect student engagement include the availability of content in local languages, learning examples from regions or topics that are familiar to students and gamified platforms.

## Recommendation

Incorporate local learning environments and constraints in the design of EdTech solutions, such as the availability of devices, school resources and teacher-student ratios to enhance and maintain engagement.

## Relevant actors

Government agencies, EdTech providers, civil society organisations.



**Key finding:**

# The inclusive and equitable adoption of EdTech hinges on the establishment of a national policy or strategy

In the Philippines, government agencies at national, regional and local levels are leading EdTech initiatives, but there is no overarching national EdTech strategy to direct their implementation. This, in part, explains the gaps in availability of EdTech tools across the country, especially for students in rural and remote areas. There is also a lack of uniformity in the EdTech tools and digital platforms deployed in different schools and regions due to partnerships with multiple philanthropic and development organisations. A national EdTech policy or strategy that covers aspects such as device procurement, criteria for digital platforms, teacher training requirements, data governance and cybersecurity measures, as well as impact assessment criteria, will be critical to a more balanced and coordinated approach to EdTech initiatives.

**Recommendation**

Establish a national EdTech policy or strategy that can be adapted at regional and local levels.

**Relevant actors**

Government agencies at the central, regional, and local levels, policy research organisations, civil society organisations.



## Key finding:

# Lessons from EdTech initiatives in LMICs and HICs suggest that multistakeholder partnerships are critical to scaling EdTech solutions

Multistakeholder collaborations and strategic partnerships are critical success factors in sustainably scaling EdTech initiatives in the markets covered in this study. In LMICs, important partners in the development and deployment of EdTech include start-ups, government agencies, philanthropic organisations, international donors and development organisations, teacher training and capacity building organisations, public schools and human-centred design agencies. For example, the EdTech start-up Rocket Learning has partnered with India's Department of Education and Ministry of Women and Child Development to expand their early childhood development solution to daycares across several states. In Vietnam, the start-up Edmicro works in collaboration with local governments to endorse their software, increasing interest from schools and teacher buy-in. Many of the solution providers consulted for this research have partnered with local governments to develop content, ensuring it is engaging and relevant to different local contexts. A good example of a successful cross-sector partnership is the collaboration between Habi Education Lab and Globe Telecom in the development and delivery of ICT training and teacher webinars.

### Recommendation

Establish stronger links between EdTech stakeholders to ensure the sustainability of ongoing EdTech initiatives. International development partners can play a role in convening ecosystem actors and facilitating discussions on key priorities.

### Relevant actors

Government agencies (DepEd), policymaking bodies, international development actors, private sector companies, EdTech solution providers.

### BOX 7

#### The role of international development partners in sharing the lessons of EdTech initiatives

Due to their international presence, development partners can play a key role in fostering an internationally collaborative EdTech ecosystem that shares and applies lessons from one market to another. International development partners are instrumental in developing data-based research and evidence to inform EdTech initiatives in LMICs. For example, the ADB, through their data-driven assessment of the digital ecosystem, has devised a series of frameworks to measure digital education ecosystem readiness that can be applied across LMICs to improve the deployment of EdTech. Countries such as the Philippines that are seeking to strengthen the delivery of EdTech can build on this work to shape efforts at the national level. Development agencies also play a key role in applying lessons from the deployment of EdTech initiatives. For instance, UNICEF's Learning Passport, a programme active in 38 countries, is in a unique position to strengthen EdTech delivery through knowledge sharing across countries. Under the Learning Passport umbrella, there is an opportunity for EdTech stakeholders in the Philippines to learn from regional peers such as Vietnam.

## Key finding:

# Emerging technologies like AI can be key to accelerating the adoption of EdTech

To seize the opportunities presented by AI to create more impactful EdTech solutions, it is important to strengthen the underlying AI ecosystem and its key components of data, skills and computing capabilities. This begins with investing in data digitalisation and storage and building datasets in local languages on which AI tools can be built. More broadly, it is essential to enable access to funding and technical support for start-ups developing AI-enabled EdTech solutions, and support computing capacity in the form of access to cloud computing, hardware devices and compute credits, as needed.

Teacher training and capacity building programmes must also include an introduction to emerging technologies to help teachers navigate AI-enabled EdTech solutions, especially those requiring user input. Finally, an important consideration is the safety and privacy of students using AI-enabled EdTech solutions. Students need to be equipped with the skills to navigate AI tools, such as prompt engineering, and EdTech providers must ensure they follow principles of trustworthy and responsible AI, such as privacy, safety, fairness and transparency.<sup>96</sup>

## Recommendation

The government, in collaboration with EdTech stakeholders, should devise a comprehensive strategy to integrate emerging technologies in education delivery, by incentivising the development of EdTech tools and developing the digital foundations required to implement them.

## Relevant actors

Research and academic institutions, Big Tech players, international development partners, start-ups, government agencies.

<sup>96</sup> For more information, see [Internet Health on](#) the Mozilla Foundation website.

# Annexes

## Annex 1: Stakeholders interviewed for the research study

### Key informants and roundtable participants in the Philippines

1. Asia South Pacific Association for Basic and Adult Education (ASPBAE)
2. Asian Development Bank (ADB)
3. Ateneo Centre for Educational Development (ACED)
4. Ateneo de Manila University
5. Berkeley School
6. Computer Science Teachers Association (CSTA) Philippines
7. Department of Education (DepEd)
8. Department of Education – Cordillera Administrative Region
9. Department of Information and Communications Technology
10. Education Department, City of Pasig
11. Felta Multi-Media Inc.
12. Foundation for Information Technology Education and Development (FIT-ED)
13. Globe Telecom
14. Gokongwei Brothers Foundation (GBF)
15. Habii Education Lab
16. Knowledge Channel Foundation, Inc. (KCFI)
17. Philippine Business for Education (PBE) Ed)
18. Philippine Business for Social Purpose (PBSP)
19. Philippine Normal University (PNU)
20. PHINMA Education
21. Saint Louis University, Philippines
22. SEAMEO INNOTECH (Regional Center for Educational Innovation and Technology)
23. Second Congressional Commission on Education (EDCOM2)
24. Silliman University
25. Smart Communications
26. Southeast Asian Ministers of Education Organisation (SEAMEO)
27. Technical Education and Skills Development Authority (TESDA)
28. UNICEF (United Nations Children’s Fund)
29. University of the Philippines National Institute for Science and Mathematics Education Development

### Other LMICs

1. Beaj, Pakistan
2. EdKasa, Pakistan
3. Edmicro, Vietnam
4. Orenda, Pakistan
5. Rocket Learning, India
6. Ruangguru, Indonesia
7. upGrad, India

## Annex 2:

# EdTech initiatives featured in the research



### Australia

#### Makers Empire

Makers Empire offers a design app to be used on tablets and laptops, and enables users to practice design thinking, engineering design and other STEM concepts.

#### Tutero

Tutero provides personalised online education and an AI-powered co-teacher platform for mathematics teachers, with features to reduce teachers' administrative and materials preparation workload and enabling them to focus on teaching.



### India

#### upGrad

upGrad provides deep learning and short certification programmes for post-grade 12 learners, including live classes, exams and grading.

#### Rocket Learning

Rocket Learning uses WhatsApp to share early childhood development content like games, tasks and activities for parents/caregivers and daycare workers to engage children in daycares and at home. They are also building an in-house predictive AI model as a personalised learning coach for users.



### Indonesia

#### Kipin

Kipin has four main service offerings: Kipin ATM, Kipin School, Kipin Classroom and Kipin PTO-Cloud. Each contains a massive database of learning resources, including textbooks, videos, practice questions and literacy comics, all curated in line with the national curriculum and available to download offline.

#### Ruangguru (AdaptoX)

AdaptoX integrates simulations and interactive games in educational videos. Students can learn at their own pace by completing lessons or playing educational games tailored to their understanding of a topic.



## Pakistan

<b>Beaj</b>	Beaj provides research-based skills development courses focussed on English language proficiency, pedagogy and soft skills to upskill teachers. Real-time feedback and personalised learning are delivered via ChatGPT-powered, bilingual speech recognition software.
<b>EdKasa (Connected Classrooms)</b>	Connected Classrooms provides hyperlocalised learning content, including access to live virtual lectures, assessments and assignments, marking and performance tracking. The platform enables multigrade schools to offer facilitate grade-appropriate student learning.
<b>Orenda (Taleemabad)</b>	Orenda is developing a tool for their Taleemabad platform that leverages AI to extract data directly from textbooks. This involves converting PDF books to images, transcribing text, identifying exercises and organising data outputs using GenAI.



## Philippines

<b>Asian Development Bank</b>	The EdTech Solutions for Last Mile Schools pilot project was implemented during the COVID-19 pandemic to provide access to connectivity, online education and capacity building in 21 last-mile schools in the Philippines.
<b>Gokongwei Brothers Foundation</b>	Class Builder provides interactive coaching to teachers to develop lesson plans, building their skills by sharing lesson content, teaching strategies and facilitation techniques. They also provide customisable lesson content that teachers can adapt to their classrooms.
<b>Khan Academy Philippines</b>	In partnership with DepEd, Khan Academy Philippines is deploying a pilot programme for that provides remedial learning for mathematics and science for students in grades 4-6.
<b>Knowledge Channel Foundation Inc.</b>	An education foundation offering a range of interventions for early childhood development and basic education, including a digital content library of educational videos and games, teacher training and capacity building programmes and pilot projects to deploy EdTech solutions across the country.
<b>UNICEF (Learning passport)</b>	Learning Passport was developed as an LMS that offers local and customised educational content that can be accessed on tablets or smartphones via a LAN, without the need to access the internet.



## United Kingdom

### **Kortext**

Kortext provides offline and online e-textbooks on their platform for students and higher education institutions. They also provide value-added services like AI-generated study notes, summaries of textbook sections, and interactive questions to test students' knowledge and educational videos.

### **MEL science**

MEL Science provides STEM education by providing a combination of physical science kits and interactive VR simulations for students. The kits enable students to read about science experiments and carry them out in real-time, in a virtual world.



## Vietnam

### **Edmicro**

Edmicro offers an LMS, personalised microlearning software, digital mock testing, online classrooms and an innovative lesson plan approval system, as well as a B2C app. Building teacher capacity is central to Edmicro and integral to their success.

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